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ABSTRACT

This report presents the results of a first phase evaluation of an expanded project of the ECES program. In its present configuration ECES contains three sections; (1) occupations-400 occupations representing many fields and levels, (2) majors-300 post-high school, college, and other training programs, and (3) charts-which summarize and compare information about the student and his explorations. The following findings were reported: (1) in urban schools students who used ECES improved more than non-users in their awareness of potential occupational resources available to them; (2) Female students improved more than male students on the quality of their decision making and the amount of decision making information they possessed; (3) White students improved more than black students in their awareness of and use of resources for exploration. Black students, however, improved more than white students in quality of decision making and in the amount of information possessed; (4) Students from rural schools showed slightly more improvement in quality of decision making and in amount of information possessed than did suburban and urban students; and (5) the type of counselor training received by a student's counselor was not related to improvement in Vocational Maturity. (RK)

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PRELIMINARY REPORT:

ASSESSMENT OF THE FIRST YEAR OF USE OF THE EDUCATIONAL AND CAREER EXPLORATION SYSTEM IN SECONDARY SCHOOLS OF GENESEE COUNTY, MICHIGAN

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Columbia University
New York, New York
1971

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Preliminary Report:

Assessment of the First Year of Use of the EDUCATIONAL AND CAREER EXPLORATION SYSTEM in Secondary Schools of Genesee County, Michigan

September 30, 1971

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INTRODUCTION

Developed several years ago at the Advanced Systems Development Division of International Business Machines (IBM), in consultation with Professors Donald E. Super and Roger A. Myers of Teachers College, Columbia University, the Educational and Career Exploration System (ECES) had its first field trial and evaluation at Montclair High School in New Jersey in the Spring of 1969. The results of that field trial were reported in detail in an unpublished monograph (Thompson _et_ _al_., 1970) and summarized in several places in the professional literature (see Appendix A). After initial trial ECES was revised and expanded by IBM in preparation for a county-wide field trial in Genesee county (Flint), Michigan. This report presents the results of the first phase of that project.

In its present configuration ECES contains three sections: _occupations_ (400 occupations, representing many fields and levels), _majors_ (300 post-high school, college, and other training programs), and _charts_, which summarize and compare information about the student and his explorations. These three sections are available to the student in an interactive mode. The terminal which the student uses consists of a film image display unit which presents relatively static information and questions and a typewriter which presents relatively individualized information to the student. In addition a fourth section of ECES, a post-high school program locator called College Finder, is available without the use of a terminal.

The Genesee County version of ECES is powered by an IBM model 360-40 computer located at the Genesee Intermediate School District (GISD) headquarters. The terminals in the field test were connected by remote data link. Nine of the terminals were grouped in one room in a building near GISD; the other three were in two high schools several miles away.

The Genesee Intermediate School District, through the office of Mr. Alva Mallory, Director of Vocational Education, provided the computer and terminals (with support from the Mott Foundation and the Michigan State Department of Education); IBM supplied the ECES package (including software) and technical support; Teachers College conducted the evaluation in cooperation with GISD and the State Department of Education. GISD also provided monitors to assist students at the group site and in one high school IBM trained counselors in the use of the system with support from Teachers College.

Many people worked on the various phases of the evaluation in helping to design and carry out the plan. Their offices and names are listed below.

Teachers College Evaluation Staff
  Donald E. Super, Principal Investigator
  Martin J. Bohn, Jr.
  Karl Heiner
  Jean Pierre Jordaan
  Richard H. Lindeman
  Roger A. Myers (since Sept. 1, 1971, Project Director)
  Albert S. Thompson

  David J. Forrest, Field Coordinator (until Aug. 31, 1971)
  Barbara K. Main, Field Assistant

Genesee Intermediate School District
  Administration:
  Alva Mallory
  Diane Petiprin

  Monitors:
  Mary Oliver
  David Dorman
  Nancy Dorman
  Lynn Scott

International Business Machines, Inc.
  Theodore H. Friel
  Jack Kelley

Michigan State Department of Education
  James Bebermeyer
  James Mahrt
  Alan Ahola

The testing and data collection was carried out by the counselors of the 25 public high schools of Genesee County.

CHAPTER I. THE EVALUATION PLAN

The field test and evaluation of ECES in Genesee County was conceived as a five-year project. The Cooperative Evaluation Project contract between the GISD and Teachers College included an initial refinement phase in the first year, focusing on instrument design and use patterns favorable to an evaluation. The second and third years were planned as the evaluation phase. Analysis and follow-up was to take place in the final years. This chapter is a report on the efforts of the 1970-71 school year, the refinement phase of the project. The purpose of this first years' work should be kept in mind: the development of a sound program of use patterns and instruments to be employed in the later evaluation. All evaluative data from the initial phase must be viewed as tentative and preliminary.

Objectives

The objectives for the first year included the following.

1. Determination of the effects of the system on student vocational behaviors as evidenced through tests of vocational development, acquisition of occupational and decision-making knowledge, appropriate information-seeking activities, contacts with counselors, and evidence of planning activities.
2. Determination of the effects of the system on counselor attitudes toward vocational counseling, on changes in the quality of their contacts with student users, and on their attitudes toward the system as an aid in counseling.
3. Determination of the attitudes of student users and their parents toward the system and its reported effects on their educational and vocational planning.
4. Determination of optimum usage patterns for the second and third years

of the field trial.

5. Refinement of the evaluation objectives, methods, instruments, and sampling procedures.

Rationale

The objectives listed above were chosen in the light of previous evaluations of the effects of guidance systems and methods, including work with other computer-systems by Loughary _et al._ (1966), Impelliteri (1967), and Harris (1968) and work with the earlier version of ECES as field tested in Montclair, N.J., by this same team of researchers (Thompson _et al._, 1970), all reported also in Super (1970).

During the past twenty years those most concerned with the study of occupational choice, career guidance, and the evaluation of vocational guidance procedures and programs have abandoned conventional concepts of vocational choice and with them the traditional criteria for the evaluation of methods. Instead, they have substituted the concept of career or vocational development for that of occupational choice, and the developmental criterion of vocational maturity for static criteria such as having an occupational choice or having a realistic occupational choice. The history of these radical changes is too long to describe in detail in a report such as this, but some of the major issues, the major studies involved, and the findings to date need to be identified here to make clear the basis for the evaluation procedures selected for refinement in the first year of the ECES-GISD Project.

The _trait-and-factor approach_ which dominated work in vocational guidance until 1951 recognized the emergence of vocationally relevant characteristics in early adolescence, and seemed to fit reasonably well the organization of school curricula requiring prevocational choices in the ninth grade. The extensive and important work along these lines was discussed in detail by Super

(1949, revised by Super and Crites, 1962). But in 1951 Super (Super et al., 1957) returned to a line of inquiry which he had begun prior to World War II (Super, 1942). He was encouraged in this by the results of a sociological study in the USA (Davidson and Anderson, 1937), a psychological study in Austria (Buehler, 1933), and, after the War, by another American sociological study (Miller and Form, 1951), and an interdisciplinary American study (Ginzberg et al., 1951).

The developmental approach stressed by this last group of researchers resulted in a series of studies of career development (Super, 1953). The Career Pattern Study (Super, 1954, 1955; Super et al., 1957; Super and Overstreet, 1960; Super, Kowalski, and Gotkin, 1967) demonstrated that the conventional objectives and criteria of vocational guidance were invalid and irrelevant in the ninth grade. This is because most ninth graders can and will, when asked to do so, report an "occupational choice", because changes in educational and occupational plans are frequent during the high school years, and because consistency of choice or of field of choice is not related to other traits of known importance in ninth graders. Furthermore, even measures of realism or wisdom of occupational choice (whether judged by the agreement of required with actual intelligence, interests, socioeconomic resources as evidenced by parental occupation, or labor market conditions so far ahead of entry into the labor market) are unrelated to each other or to any other personal trait in ninth grade, to similar traits later when in twelfth grade, or to occupational or career success or satisfaction at age 25.

Appropriate objectives and criteria for ninth grades were shown, by the Career Pattern Study, to involve planfulness and time perspective (the tendency to look ahead and plan for anticipated situations), having and seeking needed information, and knowing what kinds of information are likely to be needed. These have been characterized as indices of vocational maturity, indices which show increases as adolescents go through high school and enter college and the world of work.

The criteria developed by the Career Pattern Study have been used in independent but replicating studies in California and in the Philippines, and particularly in a replication with variations in Massachusetts by Gribbons and Lohnes (1968, 1969) as part of an evaluation of educational and vocational guidance materials developed by Katz (1958) at the Educational Testing Service. Although differing in some important details of method and findings, this independent Career Development Study essentially confirmed in 8th, 10th, and 12th grades the findings reported for the Career Pattern Study. In studying occupational plans and the outcomes of vocational guidance in several Wisconsin high schools, Rothney (1958) also confirmed the instability and virtual irrelevance of early adolescent choices, as did Flanagan and others in Project Talent (Flanagan and Cooley, 1966; Cooley and Lohnes, 1968), although the latter study found, in its highly attenuated follow-up sample, that plans are more predictive than did the studies whose follow-up samples truly represent the group originally studied in high school.

The above work has been synthesized by Myers, Jordaan, and Super (Chapters 11 and 12 in Davitz and Ball, 1970), an article by Super (1969), in a basic text by Super and Bohn (1970), and in an advanced text by Crites (1969). Evaluations of these projects and contributions have been published by Osipow (1968). More detail is therefore called for here only on the instruments of evaluation.

The vocational maturity measures devised by the Career Pattern and the Career Development Studies were designed for exploratory and replicative research, but not for practical use in individual assessment or in program evaluation.

It was Crites (1965) who first developed a practical measure, the Attitude Scale of the Vocational Development Inventory. He is currently working on a Competence Scale to complete the VDI, and developing factorial subscales of both instruments to implement his conceptual model; at this time, however, only the global score on the Attitude Scale is ready for use. This measure, used in a number of studies by Crites and by independent researchers, has the advantage of showing changing scores with increasing experience in school, but it also has the (to many users) disturbing characteristic of being highly correlated with nay-saying (answering "no" to questions).

The National Assessment Project has identified objectives for career or vocational education which draw heavily on the theoretical and empirical work in vocational maturity, and has developed appropriate items to use in assessment, but both objectives and measures are not now available to other researchers.

Westbrook (Westbrook and Cunningham, 1970) also has under way an ambitious and promising project for the development of a multifactorial, easily administered and scored, Cognitive Vocational Maturity Test. It has many desirable theoretical and practical characteristics, but seeks to measure only the intellectual or informational, as contrasted with the affective and conative or motivational aspects of vocational maturity.

Finally, in their ECES Evaluations, Super, Lindeman, Jordaan, Thompson, and Bohn began to develop a multifactorial inventory of vocational maturity in connection (Thompson et al., 1970). Their objective was to devise a variety of measures, some requiring the combination of the results of a questionnaire with the results of aptitude tests and interest and work values inventories, others assessable by means of a single questionnaire. In this, The ECES-GISD

Evaluation, some of the combined measures of vocational maturity (such as wisdom or realism of vocational preferences) were considered unlikely to be valid in tenth grade, and difficult if not impossible to obtain because of the diversity of the testing objectives and programs of the GISD, and the various cooperating schools, and the Evaluation Project. Although the Career Questionnaire used in the instrument refinement year included questions which would permit the development of multi-instrument scores, the emphasis was put on the development of an independent, virtually self-administering inventory which would assess as many of the relevant vocational maturity factors as possible in one school period. The result of this work, described below, is the Career Development Inventory. For construct validation purposes it was used, on small GISD sub-samples, with the global Gribbons and Lohnes scale, Crites' VDI, and the available part of Westbrook's CDMT.

Subjects

The students participating in the field test and evaluation were tenth graders of the 25 public high schools of Genesee County, a major automobile manufacturing area with a population of 450,000, dominated by Flint with a population of 195,000. A full usage design, operating the 11 terminals six hours a day for 23 weeks (January to June, 1971), would have accommodated approximately 2,300 experimental tenth graders. An equal number of non-users were designated as controls, yielding a total evaluation group of 4,600.

To be considered eligible for using ECES, a student had to have on file with GISD a grade-point-average from the previous year and complete scores for the Ohio Vocational Interest Survey (OVIS) and the Vocational Planning Inventory (VPI). Both instruments were used in producing a "search strategy" to help students use ECES, and the VPI also provided a predicted high school grade-point-average as a measure of intelligence used by the system. Of the

9,448 tenth graders in the county, 5,587, or 59%, met these criteria. All of these students were eligible to be included in the data collection.

To determine experimental and control classifications, the schools were paired with regard to size, socioeconomic level, location, ethnic composition, number of counselors, and dropout rate. For each pair a coin was tossed to determine which school would be the experimental one. The paired schools were:

Experimental	Control
Flint Northern (2 terminals)	Flint Central
Flint Northwestern	Flint Southwestern
Ainsworth	Carmen
Swartz Creek	Grand Blanc
Beecher	Westwood Heights
Kearsley	Flushing
Davison	Clio
Lakeville	Mt. Morris
Fenton	Bentley
Atherton (terminal)	Montrose
Bendle	Linden
Goodrich/Genesee	Lake Fenton

The experimental schools had 3,201 sophomores in the evaluation while the controls had 2,386.

The data gathered on these students included the Career Questionnaire, revised for 1971-72 as the Career Development Inventory, (all students) and the Student Reaction Form for all experimentals who used the system. A sample of system users and their parents were sent questionnaires at the end of the school year. A sub-set of experimental and control students were designated as the Intensive Study Group (ISG). In addition to the instruments mentioned above, ISG students were also given the Student Weekly Activities Report; Kuder Preference Record, Form CM; and the Work Values Inventory.

The 114 counselors in the 25 schools constitute the other major group of subjects in the evaluation. They were given the Survey of Guidance Attitudes at the beginning and end of the year. Counselors from the experimental schools also completed a Counselor Reaction Questionnaire based on their experiences with ECES and with student users.

Procedures

To obtain information on usage patterns when ECES is available on a voluntary basis to all sophomores, two terminals were placed in a large inner-city school, Flint Northern, and one in a suburban school, Atherton. Students from the other 11 experimental schools were transported by bus to the nine terminals near the GISD.

In the early plans students were to use the system for two separate 55-minute sessions, with up to three optional sessions available, considered optimal as a result of the Montclair field trial. On January 18 the usage design was changed by GISD to two two-period block sessions per student with no optional periods available. The two sessions were one week apart. The principal reasons for this change were slow sign-on and orientation progress on the system, so that most of the students barely completed the orientation in the first session; and bus scheduling problems which often resulted in too many students milling about the corridors while waiting for terminals. With this schedule, students received full exposure to the system in their first session and received more information to discuss with parents, counselors, and teachers before the second session for seeking more information. Under this schedule no optional sessions were provided. The new schedule for terminal use meant that not all of the remaining 1,952 experimental students could be accommodated in the time available. It was determined that 62% of these students could be accommodated under the revised usage schedule.

Methods/Instruments

The following section briefly describes the methods and instruments used in the evaluation.

Career Development Inventory (CDI). This measure of vocational maturity was developed by the Teachers College evaluation team as an outgrowth of the work of the Career Pattern Study and an earlier instrument used in the ECES Montclair trial. The 1970-71 form, called the Career Questionnaire, was a 236 item, two part, largely multiple-choice questionnaire designed to measure the aspects of vocational maturity listed in Objective 1 above. It was pilot tested on 60 Genesee County tenth graders in September of 1970, factor analyzed, revised and reduced to 93 items. The CDI was given to all eligible tenth graders (experimental and control) in December and January to obtain preexperimental data. It was administered again in May to the same students postexperimentally to allow comparison of those students who have been exposed to ECES with those who have not. The CDI is scored for three scales (A,B, and C) and for a total (see Appendix B).

Student Reaction Form. Immediately after using the system, students filled out a questionnaire designed to assess their immediate reaction to the system format, ease of use, clarity of presentation, and completeness of information, as well as to the general subjective worth of the system. This was a user satisfaction measure. There were two forms, a longer one for the first time on the system, and a shorter one for subsequent sessions (see Appendices C and D).

Student Weekly Activities Report (SWAR). This brief checklist deals with the activities of reading about, looking into, and discussing educational and occupational topics. It was administered weekly to a group of over 250 experimental and 250 control students who comprise ISG. These students were from two control schools, Lake Fenton and Mt. Morris, and one experimental school, Kearsley. In these schools the SWAR was administered weekly to all tenth graders for the period from mid-January to mid-May (see Appendix E).

Student Questionnaire. This form was administered in May to a sample of students who used the system. It consists of questions related to the ECES system and its effects on and contributions to the students' educational and vocational plans (see Appendix F).

Counselor training. Many counselors in experimental schools had formal exposure and training on ECES. Some counselors in the county also had human relations training under a program designed for both experimental and control schools. Thus, there were four designated groups of counselors in the county: 1) those with ECES and human relations training; 2) those with ECES training only; 3) those with human relations training only; and 4) those with no special training. Students of these four groups of counselors might be expected to deal in different ways with vocational/educational problems. This question was investigated by comparing the students' vocational behavior patterns on the CDI.

ECES training for counselors was planned and conducted by Theodore H. Friel of IBM and consisted of 24 hours of off- and on-line experience. Human relations training was planned and conducted by Robert R. Carkhuff and Bernard Berensen of Eastern Psychological, Educational, and Community Services, Inc. This training involved 36 hours of didactic and experiential training in counseling behaviors. ECES training was integrated into the final phase of training for group 1.

Interview tapes. As a further means of exploring the relationship of counselor training and ECES use to student behavior, interview tapes were solicited from the counselors. Nine counselors in experimental schools and four counselors in control schools agreed to provide four tapes each. Experimental school counselors were to provide two tapes of interviews with ECES users and two tapes of non-users. All types of counselor training experience were represented in the sample.

Counselor Reaction Questionnaire. After sample interviews with counselors, this instrument was designed to assess the counselors' experience with ECES, the administration of the program, and with student users in counseling situations (see Appendix G).

Survey of Guidance Attitudes. This 27-item, multiple-choice instrument was mailed to all counselors in December as a measure of their preexperimental belief in the value of the vocational counseling function in guidance. It was sent again in May to assess changes in these attitudes as a result of working with students who have been on ECES and/or as a result of having received ECES training themselves (see Appendix H).

Parent Questionnaire. At the end of the year this form was sent to the homes of a sample of experimental students to determine the effects of system usage on the interactions of parents with students in regard to educational and vocational planning activities. It also investigated attitudes toward the system (see Appendix J).

Planning the Second Phase

It was anticipated that accomplishing the objectives of the first phase of the trial would provide the instruments and procedures for collecting the data in the second phase of the evaluation. As is obvious from all of the above, the dominant areas of concern were:

1. for how long and how frequently should a student use ECES;
2. what were the effects of using ECES on the student's vocationally-relevant behavior;
3. how did the availability of ECES influence the counselor's functioning; and
4. what were the consequences for the parents of ECES users?

In fact, the conditions of the first phase did not lead to total readiness to plan the second phase before it was under way. The inadequacies of some of the instruments being tested, difficulties in data processing, limits imposed by the location of the terminals and the necessity for severely limited student use, and--most important--inability to obtain counselor cooperation interferred with the complete accomplishment of the first phase objectives.

On the other hand, some valuable lessons were learned. A valid, reliable and practical measure of vocational maturity was developed. Those instruments and data collection procedures which did not completely serve the purposes for which they were intended were identified and guidelines for their revision were provided. The problems of data processing have been solved. In general, many of the unpredictable problems of introducing such a large scale innovation and assessment project have been encountered and are now better understood. These new understandings provide the basis for Chapter V.

CHAPTER II. USING ECES

Considerations of how ECES was used by the students and how they reacted to it after using it are presented in this chapter. Reactions to ECES were measured immediately following each use and, for a sample of the users, at the end of the school year.

Use Patterns

The way in which students used ECES is difficult to describe because of the variety of ways in which ECES was available to them. Most students used the system at the terminal location at GISD where they were taken by bus. As explained in Chapter I, after some students had begun using the system for 55-minute periods, the procedure was changed so that students were scheduled to use it for two two-period block sessions, with no opportunity for further use. In addition, two of the schools had their own terminals and worked out use patterns as they were able.

Combining all the students who used ECES, regardless of where and when they used it, produced the following distribution of hours of use.

No. of Hours on ECES	% of Users
6 or more	5
5	.4
4	44
3	5
2	38
1	8

It is clear from this distribution that the modal use of the system was four hours, as in the planned procedure for use at the GISD terminals. The high percentage of users who had two hours on the system included many of the students from Flint Northern and a number of students who, for one reason or another, did not return to GISD for their second sessions.

From these data, very little can be said about what is optimum or ideal with regard to ECES use. Comparing these data to the use data from the Montclair field trial (Thompson et al., 1970, p. III-9), it can be observed that the per student use of ECES in the present trial was significantly less than the 6.7 hour mean use by tenth graders observed in Montclair. It should be remembered, however, that the Montclair use provided voluntary access to the system so that students could use it as often as they wanted. That condition obtained only rarely in the present trial.

Analysis of the use of the various parts of the system was also possible. In this regard, the following distribution is of interest.

	% Students: First Use	% Students: Second Use
Explored occupations	67	94
Did not explore occupations	33	6
Explored majors	31	70
Did not explore majors	69	30

The data indicate that approximately two-thirds of the users explored occupations during their first two-hour session on ECES and approximately one-third used that time to explore majors. At the second two-hour session, nearly all of the users explored occupations and two-thirds looked into majors.

One conclusion seems to be that users are twice as likely to explore occupations at their first session than they are to explore majors. Yet a sufficient number select majors in preference to occupations to justify the existence of the option. A second conclusion is that given two two-hour sessions most students will use the opportunities to look at both occupations and majors.

Student Reactions Immediately Following Use

This section reports the attempt to assess the immediate and specific reactions to ECES of the tenth grade users. Each student-user was required to complete a reaction form immediately after finishing a session at the terminal. The form asked him about the ease of using the equipment, the things he had learned from the system that day, and his overall feelings about the system. Two forms were used, one following his first use of the system and a shorter one for each subsequent session. Together the forms constituted the Student Reaction Form (SRF).

During the evaluation, several thousand SRF's were completed at the three terminal sites. From these thousands a sample was drawn so as to represent students who had used ECES for at least two sessions. In the sample, location of school (urban and non-urban) and sex were represented in the same proportions as they were in the population. Analyses of item response frequencies by sex and by location of school were conducted on SRF's from the students' first, second, and final ECES session.

The response frequencies for all students in the sample are presented in Tables 1,2, and 3. The most important observations to be made from these data is that the great majority of students indicated highly favorable reactions to all aspects of the system after their first session on the terminal. The physical features of the system were seen as easy to use. The system was judged to explain ideas, occupations, and majors well. The charts were considered helpful. The system was seen as being helpful with educational and occupational planning. The overall reaction was overwhelmingly favorable. In all of these categories there were few who disagreed with the majority, and the range of disagreement per item was small.

Reaction to the system after the second use was similar to that after the first. There was then less enthusiasm about the charts, but enthusiasm increases again after the final use (Table 3). After the second session more students wanted a longer period at the terminals, and more of them wanted to use it more often, suggesting that the benefits of the system became more apparent to the student after greater familiarity is achieved.

Chi square analyses of responses by sex and by location of school produced 21 significant tests out of 112 comparisons. The differences on any given item are not as important as the sum of those differences. In all five cases the non-urban students indicated more enthusiasm for the system than the urban students. After the first use they wanted to use the system longer and use it more times. After the second use they saw more connections between abilities and occupational possibilities, and they felt the system helped them more with educational and occupational planning. It is important to remember that the non-urban students in these cases are simply indicating a stronger favorable response. As noted earlier, nearly all students gave favorable responses.

The same is true of the differences between the responses of males and females. In all cases females gave the more enthusiastic responses. They found the equipment easier to use. They felt explanations of qualifications for occupations, of subject matter in various majors, and of connections between majors and occupations were better. They felt they received more help in educational and occupational planning. They wanted more time on the system after the first and the second use. Given overall favorable reactions to the system the finding that females and non-urban students react more favorably than their counterparts must be interpreted with care.

Student and Parent Follow-up Reactions

In order to obtain a more delayed set of reactions to the ECES experience, the Student Questionnaire (SQ) was designed. It included items about the student's general reactions to ECES, his estimates of its helpfulness in a variety of areas, suggestions for its use, and estimates of its overall effect on career planning. A shorter Parent Questionnaire (PQ) solicited similar reactions from the parents of ECES users and also included items about parents' participation in the student's planning.

At the end of the school year the SQ and PQ were distributed to 340 students who had used ECES for two sessions or more and to their parents. The students and parents surveyed constituted a representative sample of the entire user population with regard to sex, race, and location of school. Two methods for collecting the data were tried. At two Flint schools, SQ's and PQ's were mailed to the users and their parents with stamped envelopes and instructions to return the completed questionnaires by mail. At five other schools, the questionnaires were distributed to ECES users in the classroom with instructions to return them to the school. All questionnaires were to be completed anonymously by the students and their parents.

Only 27% of the students and only 25% of the parents returned usable questionnaires. This rate of return was obviously below the desirable minimum, rendering the data questionable for the purposes of generalization except for one important fact: the results are similar to findings of the ECES Montclair field test (Thompson et al., 1970), in which interviews with non-respondents assured a good sample.

Most student respondents liked the system and said that it could be helpful to all students. The majority felt uncertain about their career plans before using ECES and more definite about them afterward. They saw ECES as helpful in several specific ways, and had clear ideas about which kinds of situations were best served by ECES, which were best served by the counselor, and which required a combination of the two. Most students felt that they could profit more from talks with their counselor after using ECES than before. They felt that the system was sufficiently personal and that it was not making decisions for them. Most had discussed their use of the system with their parents. The actual response frequencies to each item are presented in Table 4.

Most parents reported having discussed ECES with their offspring, felt that ECES was helpful, and estimated that because of ECES they had become more involved in their child's educational and vocational planning. In general, the parents' responses were highly favorable and they underscored their positive reactions by showing a desire for their children's earlier introduction to ECES and by indicating a need for more emphasis of educational and vocational guidance (see Table 5).

Summary: student and parent reactions. As expected, the students' reactions to ECES immediately after using it were highly favorable. This was true after the first, second, and subsequent sessions on the terminals. In a longer term follow-up the portion of the sample of students and parents who returned completed questionnaires was small, suggesting the need for different data collection procedures. Those who did return their questionnaires displayed highly favorable attitudes.

CHAPTER III. EFFECTS OF USING ECES ON VOCATIONAL BEHAVIOR

Four attempts to assess the effects of ECES use on the vocational behavior of the students were tried out in the first phase of the research. These included a direct measure of students' vocational maturity (CDI) before and after using ECES, a weekly self-reporting on students' activities in information-seeking behavior (SWAR), follow-up questionnaires on which students (SQ) were asked to report on vocationally-relevant activities and impressions, and an attempt to analyze interview tapes to assess ECES effects on in-counseling behavior. This chapter reports on these attempts.

Effects on Students: Vocational Maturity

One of the most important criteria used in judging the effectiveness of a system such as ECES is the extent to which the experimental students differ from the control students in changes in vocational maturity. The concept of vocational maturity has several bases. One is the validated assumption that vocational behavior changes with increasing age. If one views occupational decision making as a developmental process, proceding through a succession of life stages beginning in early adolescence, then one should be able to assess a system designed to enhance such development by measuring changes in the vocational maturity of system users. Comparison of such changes with those taking place among non-users should provide evidence of system effectiveness. A second basis is the considerable research on the structure of vocational maturity, which consists of a general factor of planfulness, and of related factors of information. A final basis is the common finding that vocational plans, and realism and consistency of vocational plans, are unstable and uncorrelated not only among themselves in ninth and tenth grades, but with traits of known stability and significance. Evidence for this position is briefly reviewed early in Chapter I of this report, and sources are cited therein.

Vocational maturity was measured in this project by means of the Career Development Inventory (CDI). Drawing upon the work of Super, Crites, Gribbons and Lohnes, and Westbrook, 11 dimensions of vocational maturity were initially identified. Items were written and scales developed to measure these dimensions. After pilot work involving factor analysis and item analysis, the scales were used in revised form during the 1970-71 academic year in the Genesee County study. Analysis of pretest results from tenth graders during Spring, 1971, led to the development of the scoring system upon which the results given in this chapter are based. The 11 dimensions initially identified were reduced to three, namely, Planning Orientation (Scale A), Resources for Exploration (Scale B), and Decision Making and Information (Scale C). The subscales comprising these are shown in Table 6. Details of the development of these three vocational maturity scales of the CDI, as well as evidence of their validity and reliability are given in Forrest (1971). It suffices here to state that the three scale reliabilities (retest) range from .56 to .76, and that intercorrelations with the Crites, Gribbons and Lohnes, and Westbrook vocational maturity scales, and with intelligence, socioeconomic status, and school achievement, show that one CDI scale (C) is cognitive while two (A and B) are affective, the last two being independent of intelligence and socioeconomic status.

Findings. Pretest and posttest data on the three scales described above and their combination (Total) constitute the data on which the following results are based. Two types of analyses were done to compare experimental and control groups of tenth grade students: 1) those using sex and type of community as independent variables, and 2) those using race and sex as independent variables (restricted to schools in which both white and black students were represented). In addition, analyses were done within experimental and control groups to compare students assigned to counselors having different types of training.

Sex and type of community as independent variables. Pretest and posttest means, adjusted posttest means and standard errors, and results of the analyses of covariance F-tests (pretest used as covariate) are given in Tables 7 through 14. The analyses for each scale are based on all experimental and control students for whom both pretest and posttest scores were available. Therefore, the sample sized differed somewhat from one analysis to another.

An inspection of Tables 8,10,12, and 14 shows that significant differences between subgroups of students were found only on CDI Scale C, Decision Making and Information. The data and results given in Tables 11 and 12 reveal that, on the average, female tenth grade students tended to increase more than males (significant at the .01 level) and that students from rural schools tended to increase more than those from urban or suburban schools (significant at the .025 level) in terms of knowledge of decision-making principles and occupational information. No differences between experimentals and controls were observed in this analysis.

Note that in both cases, the differences are quite small, on the order of three-fourths of a point, on a scale with a possible range of 0 - 30 and an average within-groups standard deviation of 3.4. Thus, while statistically significant, these sex and community differences have little practical significance.

Race and sex as independent variables. Covariance analyses of CDI Scales A,B,C, and Total were also carried out using race and sex as independent variables. Only those schools in which both white and black students were well-represented (Flint Northern, Flint Northwestern, Flint Central, Flint Southwestern, and Beecher) were used in these analyses. Again the numbers of students varied from one analysis to another because of failure of some students to complete the entire CDI at both pretest and posttest administrations.

Pretest, posttest and adjusted posttest means of race and sex subgroups are given for Scales A,B,C, and Total in Tables 15,17,19, and 21, respectively. Results of the analyses of covariance on these scales are given in Tables 16, 18,20, and 22. No statistically significant differences were found either on Scale A, Planning Orientation, or on the Total. Reference to Tables 17 and 18, however, shows that on Scale B, Resources for Exploration, experimentals had significantly larger adjusted posttest means than controls and both experimental and control white students had significantly larger adjusted posttest means than experimental and control black students. These results suggest that: 1) on the average, students who used ECES tended to improve the quality of occupational resources (both potential and used) more than did non-users; and 2) on the average, the quality of resources tended to improve more during the year among white students than it did among blacks. The largest pre-post change in quality of resources occurred among experimental white females whose pretest and posttest means were 246.4 and 269.4, respectively. Two groups, experimental black females and white control females, showed slight decreases from pretest to posttest. Again, these statistically significant differences of approximately nine points in mean performance are relatively small on a scale with range 88 to 440 and average within-groups standard deviation 36.1.

Statistically significant differences between black and white students also occurred on Scale C, Decision Making and Information, as shown in Tables 19 and 20. Adjusted posttest means for black students were consistently larger than those for white students. These results show that black students tended to improve more than whites during the period of study in terms of knowledge of decision-making principles and occupational information. The difference is approximately two points on a scale with a possible range of 0 - 30 and an average within-groups standard deviation of 3.4 points.

Comparisons of different types of counselor training. In addition to the above comparisons of experimental and control treatments, covariance analyses (CDI as covariate) were carried out with experimental and control groups to determine whether students assigned to counselors who had different types of training differed in terms of the CDI Scales A,B,C, and Total. Among experimental schools three groups of counselors were identified: 1) those who had had prior training both in ECES and Human Relations (HR), 2) those who had had ECES training only, and 3) those who had no training. In control schools the counselors were classified as: 1) having had HR training, 2) not having had HR training, and 3) other, which included counselors who chose not to participate in the study. All experimental and control students were identified as having been assigned to one of the six counselor types.

Adjusted CDI (Scales A,B,C, and Total) posttest means of experimental and control students assigned to each type of counselor are given in Table 23, along with results of analyses of covariance F-tests. Inspection of Table 23 shows that there were no statistically significant differences on any of the CDI scales between adjusted posttest means of students assigned to counselors with different types of training.

Summary of results on vocational maturity. On the basis of the data on CDI pretest and posttest student performance presented in Tables 7 through 23, we may conclude as follows with respect to differences between subgroups of students classified by treatment, sex, race, type of community, and counselor training:

1. Treatment--Statistically significant differences between ECES users

and non-users were found only among students from urban schools where there were a substantial number of black students enrolled. ECES users tended to show slightly greater improvement than non-users in terms of quality of potential and used occupational resources, as measured by the CDI. The difference, however, was small, being approximately one-fourth of a standard deviation. While it is true that this finding suggests a positive effect of the limited 1970-71 use of ECES, it is not clear that the effect of two two-hour sessions at the terminals is of sufficient magnitude to enhance significantly the vocational maturity of students.

2. Sex--Statistically significant differences between males and females were found only on CDI Scale C, Decision Making and Information. Females improved slightly more than males on this scale during the period of study, but the difference was so small that it is of little practical or theoretical significance. Again, the two-session exposure to ECES may be the reason underlying the small difference.

3. Race--Statistically significant differences were also found between black and white students on CDI Scales B, Resources for Exploration, and C, Decision Making and Information. On Scale B the difference was in favor of white students, and on Scale C in favor of blacks. Differences resulting from the 1970-71 usage pattern were small in both cases and of doubtful practical significance.

4. Type of Community--Statistically significant differences were found on CDI Scale C, Decision Making and Information, between rural, suburban, and urban schools participating in the study. Rural schools tended to show slightly greater improvement during the study period. Again, however, the difference resulting from the usage pattern was so small as to have little practical significance.

5. Type of Counselor Training--No significant differences were found between students assigned to counselors having different types of training.

Of primary concern in this study was the effect of ECES on the development of vocational maturity among tenth grade students. The results presented here show that with the pattern of use in the Genesee County schools in Spring, 1971, ECES had little practical effect on career development. Non-users increased in vocational maturity at approximately the same rate as ECES users. Whether positive ECES effects would be observed under different, perhaps expanded, usage patterns and whether longer-term effects will be observed as the study of 1970-71 tenth grade students continues are not known at this time.

Effects on Students: Information-seeking Behavior

The Student Weekly Activities Report (SWAR) was designed to measure students' weekly activities in reading about, discussing, and looking into educational and occupational opportunities. The SWAR yielded four scores based on whether the activities were about educational or vocational pursuits and whether they took place in or out of school.

The SWAR was administered to the three schools comprising the Intensive Study Group, one large suburban experimental school and two smaller comparable control schools. With several hundred students responding weekly from January through May, the administration of the SWAR resulted in many thousands of completed forms. The SWAR was administered by classroom teachers on a routine weekly basis and there is some evidence to suggest that, at least after the first few administrations, many students' motivations for completing it were not optimal. Many of the forms showed careless markings which rendered interpretation of the results difficult. Such forms were not used in the subsequent analysis.

For the purposes of the analysis a sample of the students from the experimental and control schools were taken. The forms had been used in the schools for 10-14 weeks. To be included in the sample a student had to have at least nine forms that were judged to be valid. Sets of scores for 50 boys and 50 girls were drawn from the control schools. For the experimental school the student also had to have used ECES at least twice. Only 35 boys and 25 girls met both criteria for inclusion. The average weekly scores were then computed by sex and by school (experimental or control) for each of the four scales.

The analyses consisted of a series of t tests for differenses in scores between groups. There were no significant differences between males and females on any scale for any school. Similarly, there were no significant differences between experimental and control students on any scale. In a few cases obvious differences in the pattern of scores appeared over time. Even at the point of greatest difference, however, the differences are not statistically significant.

A separate analysis was performed on the scores of the experimental group to find out if the scores of students changed after using ECES. Students were selected for this analysis who had used the system twice and had at least three valid scores after using ECES. The average of weekly scores before useage and after usage were computed, and the differences of these scores were compared for group averages with the t tests for difference scores. Although some scores appeared to change in the expected direction, once again there were no statistically significant differences for either sex on any scale resulting from the 1970-71 usage pattern.

Summary of results on information-seeking behavior. The use of SWAR did not prove to be an effective means for assessing changes in students' exploratory activities which might have been attributed to the use of ECES. A variety of difficulties attendant to the instrument and its administration have been noted. It is clear that if the instrument is to be used in the future, major changes are in order. The most important changes to be effected are those of the format of the SWAR and the conditions of its administration. However, Krumboltz and Thoresen's (1964) and Buck's (1969) success in the use of self-report procedures for assessing extra-mural information-seeking activity suggests that the procedure should not be abandoned.

Effects on Students: Follow-up Estimates

The Student Questionnaire (SQ), a follow-up instrument distributed to ECES users as detailed in Chapter II, contained three items of interest on the topic of vocational behavior. Though the rate of return of these questionnaires was low and despite the fact that students' self-estimates on such matters are of relatively little value as compared to global measures of vocational maturity, the responses are reported here.

Item 7 of the SQ asked the student, "Do you feel that you have changed any of your career plans as a result of using ECES?" The 100 students for whom usable questionnaires were returned answered as follows.

Definitely not.	11
Probably not.	25
Not sure.	24
Probably have.	27
Definitely have.	13

Forty percent of the respondents thought that ECES had resulted in a change in plans and another 25% were not sure.

Item 8 asked, "How would you describe yourself in relation to your career plans for the future, now that you've used ECES?" The 100 respondents answered as follows.

I haven't thought much about my future plans.	0
I am relatively _uncertain_ about my future plans.	3

I am somewhat uncertain about my future plans.	25
I am rather definite about my future plans.	59
I am very definite about my future plans.	13

It is clear from the responses that these users see themselves as being well along the way toward making plans. Seventy-two percent are either rather definite or very definite about their plans and only 3% consider themselves undertain to a large degree.

Item 9 asked, "How has ECES affected your plans for the future?" The 100 respondents answered as follows.

I am much more confused than when I started.	1
I am somewhat more confused than when I started.	2
I am about the same as when I started.	16
I am somewhat more definite than when I started.	57
I am much more definite than when I started.	24

Clearly the vast majority of students see themselves as more definite about their plans after using ECES.

As we have attempted to point out in the Rationale section of Chapter I, such indices as these are not as reliable as indicators of future vocationally relevant behavior as are indices of planfulness, time perspective, having and seeking information, and knowing what kinds of information are needed. These data are, however, interesting as aspects of user satisfaction and are reported here for that purpose.

Analysis of Taped Counseling Interviews

The Evaluation Plan (see Chapter II) called for the collection of interview tapes for the purpose of analyzing in-counseling behavior for ECES users and non-users. The analysis was to be purely exploratory and was intended to lead toward a content analysis procedure which could be used in the second phase of the evaluation. Fourteen counselors agreed to provide four interview tapes each, recording interviews with both ECES users and non-users. Blank tapes were provided to the counselors.

Despite frequent solicitations, the counselors did not supply the taped interviews. By the time the school year ended, three of the 14 counselors who had agreed to cooperate had provided one taped interview each. The plans for the exploratory content analysis were therefore abandoned.

CHAPTER IV. THE EFFECTS OF ECES ON COUNSELORS

The plans for the construction and refinement of instruments and procedures for assessing the effects of the availability of ECES on counselors included three specific procedures. These were the collection of taped interviews as a means of studying in-counseling behaviors, a measure of counselors' attitudes toward the vocational guidance aspects of their work, and an attempt to collect counselors' reactions to ECES through group interviews. The unsuccessful attempt to collect interview tapes has already been discussed (see Chapter III); this chapter reports the details of the other two efforts.

Counselors' Attitudes toward Vocational Counseling

One of the objectives of the first year of the evaluation was the assessment of counselors' attitudes toward the vocational guidance aspects of the counselor's role. The expectation was that such attitudes might be affected by the presence of ECES as an addition to the array of guidance media. The instrument constructed to measure these attitudes was the Survey of Guidance Attitudes (SGA), a 27-item questionnaire consisting of statements about vocational guidance and requiring a counselor response that varied from "Strongly agree" to "Strongly disagree."

The SGA was mailed to all 114 counselors in the county at the beginning and again at the end of the school year. Eighty-one percent of the counselors returned completed SGA's at the beginning of the school year; 68% did so at the end of the year.

The general finding related to the SGA is that it did not discriminate among the counselors. Their responses indicated a widely-shared positive attitude toward vocational guidance activities. The only items on the SGA on which counselor responses differed meaningfully were:

Item 15. Vocational decisions are best left up to the student and his parents, with the counselor becoming involved only if requested to do so.

Item 23. Helping students with personal problems is more important than assisting them with vocational problems.

Despite the discriminating power of these two items, the instrument proved ineffective for its intended purpose.

Comparisons were made among counselors from experimental vs. control schools, among counselors who reported different titles and job duties (i.e., general counselor, special counselor, counselor-administrator), and among counselors who reported spending differing amounts of time counseling. In none of the comparisons did the differences exceed chance expectation. Nor were significant pretest-posttest differences observed.

Counselors' Attitudes toward ECES

Major effort was expended to assess the reactions of the counselors in the experimental schools to the availability of ECES and to the conduct of the evaluation. In April and in May, group interviews were held with these counselors. In the interviews, members of the evaluation staff elicited from the counselors all reactions that they were willing to make. A content analysis of these interviews produced 40 evaluative statements about ECES, the counselor training programs, and the evaluation experience. The statements were used to constitute the Counselor Reaction Questionnaire (CRQ).

In May the CRQ was sent to all counselors in experimental schools. The rationale for the CRQ was based on the desire to learn how widely-shared and how deeply-held each of the 40 evaluative statements was. Twenty-nine of the 40 experimental counselors returned usable completed CRQ's.

The results for the CRQ are reported in Table 24. From the headings in the table it can be seen that the items could be grouped in three categories:

Counselor Reactions to the Effects of ECES on Students; Counselor Reactions to Hardware, Scripts and System Mechanics; and ECES' Effects on Counselors.

In considering counselors' reactions to the effects of ECES on students, it is clear that most of the reactions were positive and supportive of the system's efficacy, but some exceptions are worth noting. Half of the counselors who reported a reaction to the statement that ECES "greatly reduced" student anxieties about occupational choice (Item 22) agreed with the statement and the other half disagree. Thirteen counselors agreed and 15 disagreed that certain of the ECES messages proved discouraging to the student (Item 28). These two exceptions considered in the context of the generally favorable and nearly-unanimous reactions to the other items suggest that counselors' observations about ECES effects were reported with some care. Although the students were seen as benefiting from ECES, the counselors were not uncritical of some of the specific effects.

Counselors' views of ECES hardware, scripts and mechanics were also generally positive, though not as nearly-unanimous as those of the previous category. Counselor opinion was divided on the appropriateness of the Vocational Planning Inventory (Item 15), on the ideal length of a student's interaction with the terminal (Item 26), and on the advisability of making ECES available to ninth graders (Item 6). Differences of opinion about the efficiency of the terminals and the computer (Item 31) also appeared, but these were probably based on counselors' real experiences with computer breakdowns and scheduling problems.

Perhaps the most interesting of the three categories of CRQ items is that having to do with how ECES and the trial influenced the work lives of the counselors themselves. Two sub-classes of this category include those effects which were more-or-less incidental consequences of the presence of ECES and those effects generated by the intentions of the ECES staff, the training program staff, and the evaluation team. Because there is no efficient way to summarize these findings, the reader is urged to inspect Table 19 carefully. However, a few observations of special interest are included here.

Most of the counselors agreed that ECES created more work for them (Item 8), though this fact may be more a function of the evaluation procedures than of the presence of the system itself. A large number agreed that ECES had caused them to do some reading they would not otherwise have done (Item 24). Eleven of the 29 stated that they had been stimulated to do some independent local research on ECES users (Item 13).

Nine of the counselors felt that demands of ECES users caused them to neglect other students (Item 29) and 13 felt that they were seeing types of students they had not previously seen (Item 38). Thirteen agreed and nine disagreed that they were working with students at a "much higher level of problem solving" following ECES use.

In general, counselor reactions to the training programs were positive. However, eight disagreed (17 agreed) that they were kept well informed about ECES (Item 4), and 10 (versus 19) felt that the time demands of the training programs were excessive.

Summary: counselor reactions. The efforts to assess counselor reactions to ECES led to the conclusions that: 1) counselors are in general favorably disposed toward the vocational guidance aspects of their work, but the SGA, though it revealed this favorable disposition, did not succeed in discriminating among the counselors on this attitude; 2) counselors generally approve of ECES when they are asked to consider its effect on students and the specifics of the system; and 3) the presence of ECES and its evaluation have brought about some positive changes in the counselors' job activities.

CHAPTER V. RECOMMENDATIONS FOR THE SECOND PHASE

Analysis of the instruments, procedures, and problems of the first year of the field trial and of the results of the first year data collection have led to a number of recommendations for the second year. These are detailed in what follows.

As before, schools should be grouped into experimental--those whose students use ECES--and control--those whose students do not--groups. Each school in the experimental group is matched by a school of similar characteristics in the control group. The findings of the first year suggest that certain questions need no longer be investigated on the basis of large groups of students. Therefore, as in the first year of the study, we have asked three pairs of schools to serve as Intensive Study Group (ISG) schools. The recommendations which follow will detail the different procedures required for the ISG schools if TC is to participate in the evaluation either according to the original GISD-TC agreement (involving the finding of supplementary funds by GISD) or according to a revised agreement (involving only funds available at TC for purposes such as this).

Use Patterns

A variety of constraints limited the patterns of student use of ECES during the first year. The most salient of these constraints was the location of the terminals at GISD and the consequent need for tight scheduling which limited the use, for most students, to two sessions. Both theoretical aspects of vocational development and experience with ECES in the Montclair field trial (Thompson et al., p. III-12) strongly suggest that a more extensive use of the system is required for significant changes in students.

Though there are still not enough terminals to permit unlimited use of ECES by all of the students in the experimental schools, the location of the terminals in the schools should make more extensive use possible for some students.

> Recommendation 1. All experimental schools will strive to make ECES available to 10th grade students for as many sessions as the students desire. If time and terminal limitations do not permit unlimited use by all 10th grade students, a system of randomly assigned "rights" will be established. That is, some students will be permitted (but not required) to use the system one time beyond the second session, some students will be permitted two additional sessions, and some students will be permitted three additional sessions. It is important that these "rights" be assigned randomly as planned by the TC team and not on the basis of individual students' enthusiasm for the system. In the ISG experimental schools, records must be kept by counselors or monitors to indicate for each 10th-grader the number of "rights" assigned and the number of sessions on the system.

Theoretical considerations and the Montclair field trial experience also suggest two other considerations for ECES use. The first is that the effects of any intervention on vocational maturity and on the behaviors from which it is inferred may not be highly visible immediately after the intervention. The specific behaviors, if they are modified, do not appear in changed form until the relevant developmental tasks confront the student.

The second consideration is that 11th-graders who have not used the system have been found (in Montclair) to be as interested in using ECES as are similar 10th-graders and tend to use it as often as 10th-graders, given the opportunity. But we do not know whether many 10th grade users still want to use ECES when in 11th grade.

Recommendation 2. All experimental schools will strive to make ECES available to 11th-graders who used the system as 10th-graders for as many sessions as the students desire. Where unlimited access for such 11th-graders is not possible a system that guarantees that a randomly chosen portion of them have some access to the system will be employed. Each school will keep a record of the 11th grade students who used ECES and of how many times they used it. In the ISG experimental schools it is essential that at least 25% of 11th-graders who used the system as 10th-graders have some access to the system.

Data Collection

Vocational maturity. The effort of the first year resulted in the construction, revision, and preliminary standardization of a measure of vocational maturity (CDI) of satisfactory reliability and validity. The fact that large changes in CDI scores were not observed for ECES users could be attributed to a variety of conditions, not all of which can be satisfactorily explored with the data from the first year. Conclusive answers to questions about ECES effects on the vocational maturity of 10th grade users require CDI data from the second year, with its different terminal location and less constrained student access to the system.

Recommendation 3. The CDI will be administered to all 10th-graders in all experimental and control group schools (1) as soon after the beginning of the 1971-72 school year as is possible and (2) as near to the end of the 1971-72 school year as is feasible.

Recommendation 4. In the ISG schools the CDI will be administered to all 11th-graders as near to the end of the school year as possible.

An important finding of the first year is that the administration of the CDI was not done with sufficient care. Large numbers of subjects were lost because answer sheets were improperly filled out and because many students did not complete all of the items on the Inventory. The suggested remedy to this situation is obviously more careful administration, facilitated by the abbreviated (one-period) version of the instrument.

> Recommendation 5. Responsible persons in all of the schools should be informed that the administration of the CDI was not uniformly well done in 1970-71 and urged to make every possible effort to improve the practice for 1971-72. As GISD now states that it cannot provide the supervision promised last year for 1971-72, the ISG schools will need to work directly with a TC Coordinator in this administration.

Information-seeking behavior. Weekly administration of the SWAR in an attempt to collect data about exploratory activities that ECES might have initiated led to adverse motivation on the part of students in the 1970-71 ISG schools. After the SWAR's which were obviously invalid reports were eliminated, no differences between ECES users and controls were observed. However, the logical validity of the SWAR and the success that others have had with similar instruments argues for an additional trial under more favorable motivational conditions.

> Recommendation 6. In ISG schools, the SWAR will be administered three times to all 10th-grade students. In experimental ISG schools, it will be administered (1) during the month of November, (2) four weeks after the student has

used ECES for the first time, and (3) during the month of May. In control ISG schools, the SWAR will be administered in November, February, and May. Again, the ISG schools will need to work directly with a TC Coordinator in this administration.

Interest continues in the potential efficacy of the use of a Resource Room as a means of counting instances of student exploratory behavior. As an observation point, an appropriately set up and controlled Resource Room provides an opportunity to record such behavior simply and accurately.

> Recommendation 7. The Resource Room data collection scheme will be explored, in ISG schools. If a practical and valid procedure can be worked out, data will be kept for both 10th and 11th grade students.

Counseling behavior. Experience from a variety of sources indicates that if exposure to ECES brings about changes in the students' approach to planning his future, these changes should be observable in the students' interviews with his counselor. Specifically, ECES users should expect and seek different things from counselors than do non-users. When planning is the focus of the interview, ECES users should be in a different state of readiness for planning. A variety of other differences should be observable.

> Recommendation 8. Counselors in ISG experimental schools will be asked by the TC Project Director to agree to tape their interviews with students in sufficient number to provide for each counselor* in the school:
>
> 2 interviews with 10th-graders who have used ECES;

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*It is recognized that it will be neither necessary nor desirable to collect data from all counselors at Flint Northwestern.

2 interviews with 11th-graders who used ECES in both 10th and 11th grades;

2 interviews with 11th-graders who used ECES in the 10th grade but not in the 11th grade.

Counselors in ISG control schools will be asked to agree to tape sufficient interviews to provide for each counselor:

2 interviews with 10th-graders;

4 interviews with 11th-graders.

Recommendation 9. At the time when students meet with counselors for the purpose of planning and scheduling their courses for the following year, all counselors in ISG schools will complete a simple Vocational Planning Readiness rating form on all students.

Counselor observations. One extremely valuable source of information about ECES is the observations of the counselors themselves, collected in interviews. In addition to providing evaluative data, such interviews are judged to be valuable as a mechanism for consulting counselors about an innovation in which they are participating.

Recommendation 10. As in the first year, interviews will be held with all experimental group counselors on their reactions to and evaluations of ECES and its use.

Counselor attitudes. Attempts to measure counselor attitudes toward vocational guidance functions proved ineffective because of technical inadequacies of the instrument (SGA). However, the topic is still considered to be one of merit. Consequently a revised instrument will be designed which focuses more on counselor activities and less on counselor attitudes than did the SGA.

> Recommendation 11. All counselors in both experimental and control schools will complete the revised SGA near the end of the school year.

User follow-up and parent follow-up. Despite the problems of collecting the SQ and PQ data in the initial phase, such data are considered highly desirable. The generally favorable nature of such long-term follow-up questionnaires demonstrated both in the Montclair field trial and in the unsatisfactory returns of the initial phase of this project, suggest that large scale data collection is no longer necessary. What is indicated is a comprehensive, focussed follow-up of a smaller number of users and their parents.

> Recommendation 12. In ISG experimental schools, slightly modified forms of the SQ and PQ should be administered to both 10th and 11th grade ECES users and to their parents in early May.

Research Management Problems

By far the most valuable lessons of the initial phase of this project were those of difficulties in research management and implementation. The problems of installing the innovation; working through the procedures; compensating for unpredicted contingencies; eliciting cooperation from the participating schools and counselors; soliciting, receiving, storing and processing data are now much better understood. Furthermore, expectations about the capabilities of the GISD-ECES staff and of the assessment team, having been tested in this initial phase, can now be revised on the basis of the experience of the first year. Consequently, the section which follows represents the final recommendation of this report, that having to do with the assignment of responsibilities for implementing the plans for the second phase of the research.

	Responsibilities	
Item	GISD-ECES	T.C.
A. USE PATTERNS: 1. ISG - Experimental schools a. Unlimited use of ECES by some 10th graders and some 11th graders, using "random rights" procedure.	Implement.	Consultation on request.
2. Experimental schools--not ISG a. Use as designed by schools (same pattern as ISG schools is suggested).	Implement.	Consultation on request.
B. DATA COLLECTION: 1. ISG--Experimental schools a. Records (1) Which students use ECES? (2) How many times each? (3) Which ECES users see which counselors, when?	Collect data.	Analyze data.
b. CDI (1) Pretest: 10th graders, Oct.-Nov. (2) Posttest: 10th and 11th graders, Apr.-May.	Supervise administration, collect and store answer sheets.	Score, process and analyze data.
c. SWAR (1) All 10th graders, November, 4 weeks after 1st ECES use, May.		Coordinate with local schools.
d. Interview tapes (1) 2 interviews per counselor with 10th grade ECES users. (2) 2 interviews per counselor with 11th graders who have used ECES both in 10th and 11th grades.		Obtain counselor cooperation, monitor progress, collect data, analyze tapes.

Item	Responsibilities	
	GISD-ECES	T.C.
d. (cont.) (3) 2 interviews per counselor with 11th graders who used in 10th but not 11th grade.		
e. Counselor ratings of Vocational Planning Readiness (1) Ratings for all 10th graders planning 11th grade courses with counselors. (2) Ratings for all 11th graders planning 12th grade courses with counselors.		Design VPR rating scale, obtain counselor cooperation, monitor progress, collect data, analyze data.
f. Group interviews with counselors--April		Schedule and conduct interviews.
g. Counselors take SGA--May		Revise SGA, coordinate administration, analyze results.
h. SQ and PQ (1) SQ to all ECES users, April. (2) PQ to all parents of ECES users, April.		Revise SQ and PQ distribute, collect SQ and PQ; follow-up non-returns, score and analyze data.
2. ISG--Control schools		
a. CDI (1) Pretest: 10th graders, Oct.-Nov. (2) Posttest: 10th and 11th graders, Apr.-May.	Supervise administration, collect and store answer sheets.	Score, process and analyze data.
b. SWAR (1) All 10th graders, November, February, May.		Coordinate with local

	Responsibilities	
Item	GISD-ECES	T.C.
c. Interview tapes (1) 2 interviews per counselor with 10th graders. (2) 4 interviews per counselor with 11th graders.		Obtain counselor cooperation, monitor progress, collect data, analyze tapes.
d. Counselor ratings of Vocational Planning Readiness (1) Ratings for all 10th graders planning 11th grade courses with counselors. (2) Ratings for all 11th graders planning 12th grade courses with counselors.		Design VPR rating scale, obtain counselor cooperation, monitor progress, collect data, analyze data.
e. Counselors take SGA--May		Revise SGA, coordinate administration, analyze results.
3. Experimental schools--not ISG a. Records (1) Which students use ECES? (2) How many times each? (3) Which ECES users see which counselors, when?	Collect data.	Analyze data.
b. CDI (1) Pretest: 10th graders, Oct.-Nov. (2) Posttest: 10th graders, Apr.-May.	Supervise administration, collect and store answer sheets.	Score, process and analyze data.
c. Group interviews with counselors		Schedule and conduct interviews.
d. Counselor take SGA--May		Revise SGA, coordinate administration, analyze results.

	Responsibilities	
Item	GISD-ECES	T.C.
4. Control schools--not ISG		
a. CDI (1) Pretest: 10th graders, Oct.-Nov. (2) Posttest: 10th graders, Apr.-May.	Supervise administration, collect and store answer sheets.	Score, process and analyze data.
b. Counselors take SGA--May		Revise SGA, coordinate administration, analyze results.

CHAPTER VI. SUMMARY

This chapter briefly summarizes the experiences and findings of the initial phase of the project.

The Evaluation Plan

1. Variations in the way ECES was available to students and the various problems of implementing such a large innovation weakened the conclusions available from the data on ECES' effects. New terminal locations and the learnings from the first year should contribute to a smoother and more effective trial.
2. The methods and instruments used in the initial phase have been developed and tested.
    a. A major accomplishment of the refinement year was the development of the Career Development Inventory, a valid and reliable measure of vocational maturity.
    b. Repeated evidence of the generally positive reactions of users to ECES, obviates the use of the Student Reaction Form in future research.
    c. The measure of information-seeking behavior, the Student Weekly Activities Report was used in a way that apparently reduced students' motivation to complete it conscientiously. Future use of the SWAR is indicated, but administration procedures must be modified.
    d. Student Questionnaires and Parent Questionnaires provide useful data. However, two methods of distribution and retrieval proved unsatisfactory. Future use must be accompanied by different methods.

   e. Counselor reluctance to provide interview tapes must be overcome if analysis of ECES effects on in-counseling behavior is to be a part of future evaluations.

3. Certain problems with the conduct of the evaluation need to be recognized.

   a. The evaluation team operated for 10 months without either the funds promised from the State Department of Education or the certainty that they were forthcoming.

   b. The GISD-ECES project suffered from a lack of manpower, resulting in an insufficient supervision of ECES use and insufficient monitoring of data collection.

   c. Communications between the evaluation team and the GISD-ECES staff, especially with respect to the cooperation of certain schools in the trial, were often less effective than they should have been.

ECES Use

1. Most students (44%) used ECES for four hours, the second largest number (38%) used ECES only for two hours. Montclair data indicate that given free access, tenth grade students used a comparable system for a mean of 6.7 hours.

2. Two-thirds of the users explored occupations during their first session on ECES and about one-third explored majors. On the second use, 94% explored occupations and 70% explored majors.

3. Student reactions immediately following the use of ECES were overwhelmingly favorable. This was true of reactions collected after a student's second use and his final use of the system as it was following the first use. In the context of responses that were

almost totally favorable, students from non-urban schools and female students showed significantly more enthusiasm about ECES than their urban or male counterparts.

4. The results of the follow-up survey conducted with users and their parents, though positive and agreeing with the reliable Montclair ECES study, were not considered sufficiently reliable to permit generalization, due to a low rate of questionnaire return. Future use of such instruments will require different and considerably more expensive procedures for administration or sampling interviews of non-respondents.

Effects on Vocational Behavior

1. Vocational maturity.
    a. In urban schools students who used ECES improved more than non-users in their awareness of potential occupational resources available to them and the quality of the resources they actually used.
    b. Female students improved more than male students on the quality of their decision making and the amount of decision-making information they possessed.
    c. White students improved more than black students in their awareness of and use of resources for exploration. Black students improved more than white students in quality of decision making and in the amount of information possessed.
    d. Students from rural schools showed slightly more improvement in quality of decision making and in amount of information possessed than did suburban and urban students.
    e. The type of counselor training received by a student's counselor

was not related to improvement in Vocational Maturity.

All of the differences reported above were practically small but statistically significant.

2. SWAR findings.

Attempts to assess increases in students' exploratory activities revealed no differences among the various ECES users. Difficulties in the design of the SWAR and the conditions of its administration became evident and can be remedied.

3. Follow-up estimates.

On follow-up questionnaires, 40% of 100 respondents thought that they had changed career plans as a result of using ECES; 72% said that they were either rather definite or very definite about their future plans; and 81% said that they were either somewhat more or much more definite about their plans than they were when they started.

4. Analysis of in-counseling effects were not possible due to the lack of requested interview tapes.

Effects on Counselors

1. SGA findings.
   - a. The SGA revealed that all counselors in the county held highly favorable attitudes toward vocational guidance activities both before and after ECES was introduced.
   - b. The SGA was not successful in discriminating among various groups of counselors on these attitudes. Some suggestions for a more differentiating instrument resulted.
2. CRQ findings.
   - a. Counselors generally approved of ECES when they were asked to

consider its effect on students and the specifics of the system.

b. The presence of ECES and its evaluation have brought about some changes in counselors' job activities.

Recommendations for the Second Phase

1. ECES should be made available to tenth grade students for as many sessions as they desire.
2. Eleventh graders who used ECES as tenth graders should also be permitted to use the system as much as they desire.
3. The CDI should be administered to all tenth graders (pre- and posttest) and to all eleventh graders in ISG schools (posttest only).
4. The SWAR should be administered to ECES users in ISG schools three times during the year.
5. The Resource Room data collection should be explored again.
6. Counselors in ISG schools should provide tapes of six students, including both tenth grade and eleventh grade users.
7. Counselors should rate all tenth and eleventh grade students on Vocational Planning Readiness after the interview in which the following year's courses are planned.
8. Group interviews should be held with counselors from experimental schools for the purpose of assessing their reactions to ECES.
9. All counselors should take the revised SGA in the Spring of 1972.
10. Modified forms of the SQ and the PQ should be administered to ECES users and their parents at the ISG experimental schools.

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Table 1. Response frequencies to Student Reaction Form - Form I, first time on system.

1. How easy was it for you to learn to use each of the following features of the ECES system?

	Very Easy	Fairly Easy	Fairly Hard	Very Hard	I did not use it today	No Response
a. The POINTER	329	64	6	1	6	14
b. The NEXT PICTURE box	353	50	1	2	0	14
c. The LOAD-UNLOAD boxes	227	127	17	1	30	18
d. The HELP, GO BACK and ERASE boxes	187	154	25	4	34	16
e. The ten NUMBER BOXES	317	71	4	1	6	21
f. The OCCUPATIONS, MAJORS, and CHARTS boxes	243	128	19	4	8	18
g. The keys on the typewriter	196	119	25	1	59	20

2. How good a job did the system do of explaining to you each of the following ideas?

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	No Response
a. Fields of interest	216	163	10	2	29
b. Job features such as working conditions, salary, etc.	232	137	11	4	36
c. Amount of education required	233	135	12	1	39
d. Relationship between occupations and majors in high school and college	158	204	21	3	34

3. Did you explore any occupations today? If yes, how good a job did the system do of explaining each of the following?

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	Does not apply or did not see	No Response
a. The activities performed by people in the occupation	168	103	3	1	7	138
b. The tools, equipment or resources used by people in the occupation	117	111	22	7	23	140
c. The qualifications needed by people in the occupation.	181	79	10	1	7	142

Table 1. (continued)

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	Did not apply or did not see	No Response
d. The working conditions in the occupation	168	89	8	3	12	140
e. The education and training needed in the occupation	182	77	12	3	5	141
f. The chances of employment in the occupation	130	103	16	7	23	141
g. The salary you could expect in the occupation	183	56	11	1	28	141
h. The chances of advancement in the occupation	141	80	22	4	27	146

4. Did you explore any majors today? If Yes, how good a job did the system do of explaining:

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	Does not apply or did not see	No Response
a. What courses are required in the major?	75	43	6	2	6	288
b. The subject matter covered by each course in the major?	65	48	9	1	8	289
c. The electives suggested for a particular major?	65	39	13	3	11	289

5. Were the charts easy to understand?

Very Easy	Fairly Easy	Fairly Hard	Very Hard	Did not see any charts	No Response
122	119	10	2	18	149

6. How good a job did the charts do in helping you to:

	Very Good	Fairly Good	Fairly Poor	Very Poor	Did not see any charts	No Response
a. see connections between your interests and possible occupations?	137	169	13	2	29	70
b. see connections between your abilities and possible occupations?	138	164	9	3	33	73
c. discover new occupational possibilities you might look into?	142	134	26	5	39	74
d. see connections between majors and occupations?	147	128	23	5	38	79

Table 1. (continued)

7. How good a job did the ECES system do in helping you in the area of:

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	No Response
a. educational planning?	162	179	19	4	56
b. occupational planning?	169	174	18	4	55

8. Each time you use the ECES system you spend about an hour at the terminal. Is that about the right amount of time?

No, an hour is too long.	14
Yes, an hour is about right.	190
No, an hour is too short.	173
No response.	43

9. If you use the ECES system for about an hour each time, how many times do you think you should use it while in the 10th grade?

1 or 2 times.	66
3 or 4 times.	179
5 or 6 times	62
7 or more times.	64
No response.	49

10. How good a job did each of the following features do in helping you to learn about occupations?

	Very Good	Fairly Good	Fairly Poor	Very Poor	No Response
a. Cartoons	136	167	40	4	73
b. Photographs	170	150	19	3	78

11. What is your overall reaction to the ECES system?

I like it very much.	313
I like it somewhat.	54
I dislike it somewhat.	1
I dislike it very much.	0
No response.	52

Table 2. Response frequencies to Student Reaction Form - Form II, second time on system.

1. Counting today, the number of times you have been on the ECES system is:

No. of times	
One	0
Two	395
Three	0
Four	0
Five or more	0
No response	25

2. Did you explore any occupations today? How good a job did the system do of explaining each of the following?

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	Does not apply or did not see	No Response
a. The activities performed by people in the occupation	248	131	11	1	3	26
b. The tools, equipment or resources used by people in the occupation	201	151	23	3	15	27
c. The qualifications needed by people in the occupation	290	92	8	0	1	29
d. The working conditions in the occupation	264	112	11	1	3	29
e. The education and training needed in the occupation	289	91	11	0	2	27
f. The chances of employment in the occupation	230	135	15	3	7	30
g. The salary you could expect in the occupation	298	78	9	3	6	26
h. The chances of advancement in the occupation	235	130	15	1	13	26

3. Did you explore any majors today? How good a job did the system do of explaining:

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	Does not apply or did not see	No Response
a. what courses are required in the major?	179	77	8	2	27	127
b. the subject matter covered by each course in the major?	149	92	17	1	30	131
c. the electives suggested for a particular major?	144	97	13	2	32	132

Table 2. (continued)

4. Did you look at any charts on the system today? Yes ____ No ____

5. Were the charts easy to understand?

Very Easy	Fairly Easy	Fairly Hard	Very Hard	Did not see any charts	No Response
234	109	10	3	8	56

6. How much did the charts help you to:

	Very Much	Fairly Much	A Little	Very Little	Did not see any charts	No Response
a. see connections between your interests and possible occupations?	207	120	33	7	8	45
b. see connections between your abilities and possible occupations?	197	121	43	4	8	47
c. discover new occupational possibilities you might look into?	204	103	36	14	15	48
d. see connections between majors and occupations?	179	113	46	15	18	49

7. How good a job did the ECES system do in helping you in the area of:

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	No Response
a. educational planning?	233	130	15	4	38
b. occupational planning?	237	130	15	4	34

8. Each time you use the ECES system you spend about an hour at the terminal. Is that about the right amount of time?

No, an hour is too long.	6
Yes, an hour is about right.	188
No, an hour is too short.	188
No response.	38

9. If you use the ECES system for about an hour each time, how many times do you think you should use it while in the 10th grade?

1 or 2 times.	51
3 or 4 times.	187
5 or 6 times.	81
7 or more times.	65
No response.	36

Table 2. (continued)

10. What is your overall reaction to the ECES system?

I like it very much.	328
I like it somewhat.	54
I dislike it somewhat.	4
I dislike it very much.	0
No response.	34

Table 3. Response frequencies to Student Reaction Form for students' last time on system.

1. Counting today, the number of times you have been on the ECES system is:

No. of times	
One	0
Two	0
Three	37
Four	16
Five	9
Six	1
Seven	1
No response	356

2. ----
3. ----
4. ----
5. ----

6. How much did the charts help you to:

	Very Much	Fairly Much	A Little	Very Little	Did not see any charts	No Response
a. see connections between your interests and possible occupations?	36	20	1	1	4	358
b. see connections between your abilities and possible occupations?	36	17	4	1	4	358
c. discover new occupational possibilities you might look into?	31	20	2	2	7	358
d. see connections between majors and occupations?	33	17	3	4	3	360

7. How good a job did the ECES system do in helping you in the area of:

	Very Good Job	Fairly Good Job	Fairly Poor Job	Very Poor Job	No Response
a. educational planning?	41	19	3	1	356
b. occupational planning?	45	18	1	0	356

8. Each time you use the ECES system you spend about an hour at the terminal. Is that about the right amount of time?

No, an hour is too long.	2
Yes, an hour is about right.	32
No, an hour is too short.	30
No response.	356

Table 3. (continued)

9. If you use the ECES system for about an hour each time, how many times do you think you should use it while in the 10th grade?

1 or 2 times.	2
3 or 4 times.	26
5 or 6 times.	18
7 or more times.	18
No response.	356

10. What is your overall reaction to the ECES system?

I like it very much.	53
I like it somewhat.	11
I dislike it somewhat.	0
I dislike it very much.	0
No response.	356

Table 4. Frequencies of student responses to the Student Questionnaire.

1. What is your overall reaction to the Educational and Career Exploration System (ECES)?

1. I like it very much.	68
2. I like it somewhat.	23
3. I dislike it somewhat.	1
4. I dislike it very much.	0

2. Do you think most students could benefit from ECES?

1. Definitely not.	0
2. Probably not.	2
3. Probably could.	48
4. Definitely could.	42

3. In what grade do you feel that it would be best for a student to begin sessions with ECES?

5th	0
6th	0
7th	6
8th	12
9th	47
10th	22
11th	4
12th	1

4. ECES is most suitable for:

1. those who are going directly to work.	7
2. those who will take some "after high school training."	8
3. those who are going to 2 or 4 year colleges.	7
4. all of the above.	67
5. none of the above.	3

5. ----

6. How would you describe yourself, in relation to your career plans for the future, before you started using ECES?

1. I hadn't thought much about my future plans.	4
2. I was really uncertain about my future plans.	14
3. I was somewhat uncertain about my future plans.	43
4. I was rather definite about my future plans.	29
5. I was very definite about my future plans.	2

Table 4. (continued)

7. Do you feel that you have changed any of your career plans for the future as a result of using ECES?

1. Definitely not.	9
2. Probably not.	22
3. Not sure at this time.	22
4. Probably have.	25
5. Definitely have.	13
- No response.	1

8. How would you describe yourself, in relation to your career plans for the future, now that you've used ECES?

1. I haven't thought much about my future plans.	0
2. I am really uncertain about my future plans.	3
3. I am somewhat uncertain about my future plans.	21
4. I am rather definite about my future plans.	55
5. I am very definite about my future plans.	12
- No response.	1

9. How has ECES affected your plans for the future?

1. I am much more confused than when I started.	1
2. I am somewhat more confused than when I started.	2
3. I am about the same as when I started.	15
4. I am somewhat more definite than when I started.	50
5. I am much more definite than when I started.	23
- No response.	2

10. About how many new occupations did you explore on ECES that you previously knew little or nothing about?

1. None.	2
2. 1 - 3.	53
3. 4 - 6.	25
4. 7 - 9.	7
5. 10 or more.	3
- No response.	1

Table 4. (continued)

11. About how many new majors did you explore on ECES that you previously knew little or nothing about?

1. None.	14
2. 1 - 3.	67
3. 4 - 6.	7
4. 7 - 9.	2
5. 10 or more.	1
- No response.	1

Below are five possible statements to be used with the items below.

1. Hardly at all.
2. To only some extent.
3. To an average extent.
4. To a pretty good extent.
5. To a great extent.

Choose the statement above that describes your situation.

To what extent has ECES:

	1	2	3	4	5
12. been helpful to you in the area of educational planning?	6	9	26	41	10
13. been helpful to you in the area of occupational planning?	2	7	19	46	18
14. helped you find definite paths of action in reaching your goals?	2	19	28	32	11
15. helped you understand how your strengths and weaknesses fit in with your educational goals?	2	7	33	29	21
16. helped you understand how your strengths and weaknesses fit in with your occupational goals?	1	8	28	34	21
17. helped you find new information about your situation that helped you make decisions?	6	7	18	31	30
18. made you feel more aware of the possible educational alternatives you have?	6	12	30	27	17
19. made you feel more aware of the possible occupational alternatives you have?	5	3	29	36	19
20. helped you become aware of the important factors on which to base your educational decisions?	3	8	31	32	18
21. helped you become aware of the important factors on which to base your occupational decisions?	2	10	21	43	16
22. helped you make better educational decisions?	6	7	32	31	16
23. helped you make better occupational decisions?	5	6	19	43	19

Table 4. (continued)

Below are some things that are generally thought to be necessary in a guidance program. Please consider each one and decide whether it could be best handled by a counselor, ECES, or a combination of the two.

1. The counselor.
2. ECES.
3. The counselor and ECES.
4. Either the counselor or ECES could do it.
5. Some other source.

Helping you:

	1	2	3	4	5	NR
24. obtain information about high school courses.	45	6	27	7	2	2
25. understand your interests and abilities better.	15	26	35	10	4	2
26. consider summer experience in occupations you are thinking about.	29	6	26	9	19	3
27. see connections between your high school experience and future plans.	15	22	35	12	5	3
28. get useful facts about occupations.	2	49	28	8	3	2
29. discover new educational possibilities you might look into.	7	34	26	19	3	3
30. discover new occupational possibilities you might look into.	3	45	28	12	1	3
31. get information on colleges or training schools.	37	6	31	10	6	2
32. make decisions about what to do after high school.	14	10	36	7	23	2

33. Do you feel that because of using ECES you would profit more from talks with your counselor?

1. Definitely not.	1
2. Probably not.	18
3. Probably would.	47
4. Definitely would.	24
- No response.	2

34. About how many times did you talk with your counselor about your ECES printouts?

1. Not at all.	45
2. Once.	22
3. Twice.	16
4. 3 times.	6
5. 4 or more times.	1
- No response.	2

Table 4. (continued)

Please consider the following statement. Then, indicate the extent to which you agree or disagree with each one.

1. Strongly disagree.
2. Mildly disagree.
3. Mildly agree.
4. Strongly agree.

	1	2	3	4	NR
35. I felt that my future was being decided for me.	53	21	13	3	2
36. I felt that ECES tried to choose an occupation for me.	48	22	13	7	2
37. I feel that ECES tried to choose a major for me.	47	24	13	6	2
38. The pictures helped me understand occupations better.	3	6	37	44	2
39. I would have liked more pictures showing occupations.	2	20	35	33	2
40. The work samples were useful and informative.	3	2	30	55	2
41. There should have been more difficult and longer work samples.	10	29	34	17	2
42. The ECES system was personal enough.	13	13	46	17	3

43. How often did you discuss the ECES system with your parents?

1. Never.	9
2. Once.	16
3. Twice.	20
4. 3 times.	17
5. 4 or more times.	29
- No response	1

44. What was your parents' reaction to the ECES printouts?

1. They didn't see any printouts.	10
2. Definitely unfavorable.	1
3. Generally unfavorable.	3
4. Generally favorable.	61
5. Definitely favorable.	16
- No response.	1

45. How easy was it for you to read the printouts?

1. Very easy.	46
2. Rather easy.	23
3. So-so.	18
4. Rather difficult.	2
5. Very difficult.	2
- No response.	1

46. ----
47. ----

Table 4. (continued)

48. Did you see Chart 80--the one that summed up all your exploration?

Yes.	37
Not sure.	35
No.	15
No response.	5

49. Do you feel that you have learned how to make better Career Decisions as a result of using ECES?

1. Definitely have.	37
2. Probably have.	48
3. Probably have not.	5
4. Definitely have not.	0
- No response.	2

50. ----

51. What schedule would be best for you in using ECES?

1. Once a week for several weeks, on a scheduled basis.	28
2. Once a month throughout the year, on a scheduled basis.	17
3. Whenever I feel it can help me, on a sign-up basis.	45
- No response.	2

52. Should your school conduct a "Career Planning" course that includes use of ECES along with regular discussions about choosing careers and how to plan for them?

Yes.	75
Not sure.	14
No.	1
No response.	2

53. ----
54. ----
55. ----

Table 5. Frequencies of parent responses to Parent Questionnaire.

A.

1. To what extent has your son or daughter discussed his use of ECES in exploring educational and career possibilities?

1. We discuss it regularly.	9
2. There has been quite a lot of discussion at different times.	36
3. There has been some discussion--but not much.	30
4. It was mentioned--but only briefly.	7
5. Not at all.	0
- No response.	3

2. ----

3. Do you feel that the ECES program can provide significant benefits for your child?

1. Definitely cannot.	0
2. Probably cannot.	4
3. Probably can.	49
4. Definitely can.	29
- No response.	3

4. Do you feel that you have become more involved in your child's educational or vocational planning since his or her participation in the ECES program?

1. Definitely have not.	4
2. Probably have not.	18
3. Probably have.	44
4. Definitely have.	15
- No response.	4

5. How much help do you feel your son or daughter has received from the ECES program in each of the areas below?

1. None at all.
2. Hardly any help.
3. Some--but not much help.
4. A considerable amount of help.
5. A great deal of help.

	1	2	3	4	5	NR
A. Seeing connections between his or her high school experience and future plans.	1	4	16	42	14	5
B. Getting useful facts about occupations.	0	3	11	39	27	5
C. Seeing connections between his or her interests and possible occupations.	2	1	12	36	26	8
D. Seeing connections between his or her abilities and possible occupations.	1	1	19	36	22	6
E. Discovering new occupational possibilities he or she might look into.	2	4	13	39	22	5

Table 5. (continued)

	1	2	3	4	5	NR
F. Discovering new educational possibilities he or she might look into.	2	8	20	33	14	6
G. Making good decisions about what to do after high school.	5	4	13	41	18	4

6. Do you feel your son or daughter is better able to make decisions about his or her career as a result of participating in the ECES program?

1. Definitely is not.	1
2. Probably is not.	6
3. Probably is.	45
4. Definitely is.	29
- No response.	4

7. How active have you been in each of the areas below?

1. Not active at all.
2. Not very active.
3. Fairly active.
4. Very active.
5. Extremely active.

	1	2	3	4	5	NR
A. Helping your son or daughter find summer employment that related to career goals.	32	26	13	7	0	7
B. Meeting with a school guidance counselor to discuss your son's or daughter's situation and plans.	46	15	10	6	0	5
C. Making sure that your son or daughter was meeting with the counselor.	22	20	22	12	3	6
D. Encouraging your son or daughter to talk with individuals employed in careers he or she is considering.	14	21	27	13	3	7
E. Obtaining books, pamphlets, or other educational and occupational information to assist your son or daughter to decide on future plans.	25	19	18	9	7	7
F. Obtaining private vocational testing and counseling for your son or daughter.	55	12	6	3	0	9

8. If a service similar to ECES were available, in what grade would you want your son or daughter to begin using it?

5th	3
6th	1
7th	13
8th	19
9th	29
10th	11
11th	5
12th	0
No response	4

Table 5. (continued)

B. Questions about the guidance program in your son's or daughter's high school.

12. Independent of ECES in general, my son's or daughter's high school guidance program has:

1. been better than my expectations.	10
2. lived up to my expectations.	30
3. I am unfamiliar with the program.	30
4. not lived up to my expectations.	8
5. definitely fell short of my expectations.	4
- No response.	3

13. ----

14. Do you feel that there should be more emphasis on educational and vocational guidance in high school than there is now?

1. Definitely should not.	0
2. Probably should not.	0
3. Probably should.	21
4. Definitely should.	60
- No response.	4

15. How far do you plan for your child to go in school?

1. Less than high school diploma or equivalent.	0
2. High school diploma or equivalent.	13
3. Post-high school training other than junior college.	11
4. Junior college graduation.	11
5. College graduation.	34
6. Graduate school.	12
- No response.	4

16. How far did you go in school?

	Father	Mother
1. Less than high school diploma or equivalent.	37	22
2. High school diploma or equivalent.	16	29
3. Post-high school training other than junior college.	9	13
4. Junior college graduate.	6	5
5. College graduate.	5	5
6. Graduate school.	5	6
- No response.	7	5

17. ----

Table 6. Subscales comprising the A, B, and C Scales of the Career Development Inventory.

Scale	Subscale	No. of Items
A: Planning Orientation	Specificity of planning	14
	Self-estimated amount of occupational information	11
	Definitiveness of plans	1
	Concern with choice	7
	Total, Scale A:	33
B: Resources for Exploration	Quality of potential resources	15
	Quality of used resources	15
	Total, Scale B:	30
C: Decision Making and Information	Knowledge of decision-making principles	12
	Measured occupational information	18
	Total, Scale C:	30

Table 7. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Scale A--by sex and type of community.

Type of Community	Treatment	Sex	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Mean[b]	Posttest St. Error
Urban	E	M	58	105.4	109.6	107.6	1.77
		F	73	106.5	110.0	107.2	1.58
	C	M	166	105.3	108.1	106.1	1.05
		M	166	103.6	107.4	106.7	1.04
Suburban	E	M	80	101.3	103.9	104.9	1.50
		F	104	104.8	108.8	107.3	1.32
	C	M	229	101.9	105.9	106.5	0.89
		F	295	99.1	104.0	106.6	0.78
Rural	E	M	33	106.6	107.0	104.2	2.34
		F	26	106.7	110.3	107.4	2.64
	C	M	73	102.5	106.7	106.9	1.57
		F	77	101.7	106.2	107.0	1.53

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 19.1.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 13.5.

Table 8. Results of analysis of covariance of differences between means of experimental and control groups on CDI Scale A--by sex and type of community.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 1367	.05	NS
Sex (S)	1 and 1367	1.19	NS
Type of Community (C)	2 and 1367	.16	NS
TxS	1 and 1367	.63	NS
TxC	2 and 1367	.38	NS
SxC	2 and 1367	.23	NS
TxSxC	2, 1367	.41	NS

Table 9. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Scale B--by sex and type of community.

Type of Community	Treatment	Sex	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest	
						Mean[b]	St. Error
Urban	E	M	72	245.6	250.8	244.7	4.26
		F	76	255.3	261.2	248.6	4.16
	C	M	176	228.6	234.5	239.6	2.72
		F	175	234.3	239.7	240.9	2.73
Suburban	E	M	78	241.1	248.8	245.6	4.09
		F	98	242.9	244.3	239.9	3.65
	C	M	228	234.6	239.8	240.9	2.39
		F	278	239.6	241.4	239.2	2.17
Rural	E	M	27	247.8	253.5	245.9	6.95
		F	31	243.5	236.5	231.7	6.48
	C	M	78	225.2	228.7	236.0	4.09
		F	84	216.5	223.6	236.7	3.96

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 46.3.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 36.1.

Table 10. Results of analysis of covariance of differences between means of experimental and control groups on CDI Scale B--by sex and type of community.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 1388	2.42	NS
Sex (S)	1 and 1388	1.14	NS
Type of Community (C)	2 and 1388	1.66	NS
T by S Interaction	1 and 1388	1.23	NS
T by C Interaction	2 and 1388	.25	NS
S by C Interaction	2 and 1388	1.08	NS
T by S by C Interaction	2 and 1388	.90	NS

Table 11. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Scale C--by sex and type of community.

Type of Community	Treatment	Sex	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest Mean[b]	Adjusted Posttest St. Error
Urban	E	M	63	16.6	16.8	17.1	.43
		F	72	16.9	17.6	17.7	.40
	C	M	159	17.1	17.3	17.2	.27
		F	149	17.4	17.9	17.6	.28
Suburban	E	M	86	17.4	16.5	16.3	.37
		F	118	17.6	18.2	17.9	.31
	C	M	240	17.0	17.1	17.1	.22
		F	300	17.0	17.7	17.7	.20
Rural	E	M	39	16.7	17.5	17.8	.55
		F	33	16.0	17.5	18.2	.60
	C	M	76	16.7	17.8	18.1	.39
		F	77	17.0	18.3	18.3	.39

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 4.7.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 3.4.

Table 4. (continued)

Below are some things that are generally thought to be necessary in a guidance program. Please consider each one and decide whether it could be best handled by a counselor, ECES, or a combination of the two.

1. The counselor.
2. ECES.
3. The counselor and ECES.
4. Either the counselor or ECES could do it.
5. Some other source.

Helping you:

	1	2	3	4	5	NR
24. obtain information about high school courses.	45	6	27	7	2	2
25. understand your interests and abilities better.	15	26	35	10	4	2
26. consider summer experience in occupations you are thinking about.	29	6	26	9	19	3
27. see connections between your high school experience and future plans.	15	22	35	12	5	3
28. get useful facts about occupations.	2	49	28	8	3	2
29. discover new educational possibilities you might look into.	7	34	26	19	3	3
30. discover new occupational possibilities you might look into.	3	45	28	12	1	3
31. get information on colleges or training schools.	37	6	31	10	6	2
32. make decisions about what to do after high school.	14	10	36	7	23	2

33. Do you feel that because of using ECES you would profit more from talks with your counselor?

1. Definitely not.	1
2. Probably not.	18
3. Probably would.	47
4. Definitely would.	24
- No response.	2

34. About how many times did you talk with your counselor about your ECES printouts?

1. Not at all.	45
2. Once.	22
3. Twice.	16
4. 3 times.	6
5. 4 or more times.	1
- No response.	2

Table 12. Results of analysis of covariance of differences between means of experimental and control groups on CDI Scale C--by sex and type of community.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 1399	.78	NS
Sex (S)	1 and 1399	8.57	.01
Type of Community (C)	2 and 1399	5.28	.025
T by S Interaction	1 and 1399	1.27	NS
T by C Interaction	2 and 1399	.21	NS
S by C Interaction	2 and 1399	1.40	NS
T by S by C Interaction	2 and 1399	.45	NS

Table 13. Pretest and posttest means and adjusted posttest means and standard deviations of experimental and control groups on CDI Total Scale--by sex and type of community.

Type of Community	Treatment	Sex	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest Mean[b]	Adjusted Posttest SD
Urban	E	M	44	370.5	387.0	379.1	6.39
		F	54	386.2	390.6	370.1	5.80
	C	M	115	254.2	363.3	367.8	3.95
		F	98	355.8	359.2	362.4	4.28
Suburban	E	M	50	357.8	373.2	375.0	6.00
		F	74	365.0	370.3	366.6	4.92
	C	M	147	364.1	374.3	371.2	3.49
		F	212	357.2	364.3	366.5	2.91
Rural	E	M	23	377.2	385.4	372.4	8.84
		F	20	379.3	381.3	366.7	9.48
	C	M	51	344.5	357.0	368.9	5.94
		F	47	339.6	354.0	369.6	6.20

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 60.8.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 42.4.

Table 14. Results of analysis of covariance of differences between means of experimental and control groups on CDI Total Scale--by sex and type of community.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 922	1.31	NS
Sex (S)	1 and 922	2.36	NS
Type of Community (C)	2 and 922	.01	NS
T by S Interaction	1 and 922	.40	NS
T by C Interaction	2 and 922	.62	NS
S by C Interaction	2 and 922	.15	NS
T by S by C Interaction	2 and 922	.02	NS

Table 15. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Scale A--by race and sex.

				Pretest	Posttest	Adjusted Posttest	
Treatment	Sex	Race	N	Mean[a]	Mean[a]	Mean[b]	St. Error
E	M	B	45	105.4	109.4	109.1	1.99
		W	13	105.7	110.5	110.0	3.70
	F	B	53	106.5	109.7	108.6	1.83
		W	20	106.5	110.6	109.5	2.98
C	M	B	135	105.6	107.5	107.0	1.15
		W	31	104.2	110.6	111.1	2.39
	F	B	134	102.9	107.2	108.7	1.15
		W	31	107.2	109.1	107.4	2.39

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 19.1.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 13.5.

Table 16. Results of analysis of covariance of differences between means of experimental and control groups on CDI Scale A--by race and sex.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 453	.19	NS
Sex (S)	1 and 453	.21	NS
Race (R)	1 and 453	.51	NS
T by S Interaction	1 and 453	.03	NS
T by R Interaction	1 and 453	.02	NS
S by R Interaction	1 and 453	.65	NS
T by S by R Interaction	1 and 453	.66	NS

Table 17. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on Vocational Maturity Scale B--by race and sex.

Treatment	Sex	Race	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest Mean[b]	Adjusted Posttest St. Error
E	M	B	54	241.3	245.6	243.0	4.87
		W	18	258.4	266.7	252.7	8.46
	F	B	52	262.1	260.3	243.8	5.03
		W	25	246.4	269.4	263.4	7.16
C	M	B	146	227.8	231.6	238.0	2.98
		W	30	232.6	248.7	251.9	6.53
	F	B	140	233.0	240.3	243.2	3.03
		W	35	239.8	237.2	235.6	6.05

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 46.3.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 36.1.

Table 18. Results of analysis of covariance of differences between means of experimental and control groups on Vocational Maturity Scale B--by race and sex.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 491	4.23	.05
Sex (S)	1 and 491	0.00	NS
Race (R)	1 and 491	4.75	.05
T by S Interaction	1 and 491	1.91	NS
T by R Interaction	1 and 491	1.97	NS
S by R Interaction	1 and 491	0.50	NS
T by S by R Interaction	1 and 491	3.69	NS

Table 19. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Scale C--by race and sex.

Treatment	Sex	Race	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest Mean[b]	Adjusted Posttest St. Error
E	M	B	49	17.3	17.8	17.7	.49
		W	14	14.4	13.2	15.2	.93
	F	B	53	17.7	18.4	18.0	.48
		W	19	14.9	15.4	17.0	.80
C	M	B	132	17.8	17.8	17.3	.30
		W	27	13.9	14.6	17.0	.68
	F	B	124	18.0	18.5	17.8	.31
		W	25	14.2	14.9	16.9	.70

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 4.7.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 3.4.

Table 20. Results of analysis of covariance of differences between means of experimental and control groups on CDI Scale C--by race and sex.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 434	0.43	NS
Sex (S)	1 and 434	2.20	NS
Race (R)	1 and 434	6.66	.02
T by S Interaction	1 and 434	0.94	NS
T by R Interaction	1 and 434	1.68	NS
S by R Interaction	1 and 434	0.31	NS
T by S by R Interaction	1 and 434	1.37	NS

Table 21. Pretest and posttest means and adjusted posttest means and standard errors of experimental and control groups on CDI Total Scale--by race and sex.

Treatment	Sex	Race	N	Pretest Mean[a]	Posttest Mean[a]	Adjusted Posttest Mean[b]	Adjusted Posttest St. Error
E	M	B	36	365.4	382.2	380.6	7.11
		W	8	393.1	408.1	386.1	15.14
	F	B	40	386.9	387.8	370.3	6.82
		W	14	384.1	398.6	383.1	11.44
C	M	B	97	357.4	362.9	367.2	4.34
		W	21	342.5	363.3	378.6	9.35
	F	B	90	357.1	370.7	375.3	4.51
		W	22	363.2	364.2	364.2	9.10

[a] Standard deviations for subgroups are not given. The average within-groups standard deviation was 60.8.

[b] Standard deviations for subgroups are not given. The average within-groups standard deviation was 42.4.

Table 22. Results of analysis of covariance of differences between means of experimental and control groups on CDI Total Scale--by race and sex.

Effect	Degrees of Freedom	F-value	Level of Significance
Treatment (T)	1 and 319	1.77	NS
Sex (S)	1 and 319	0.58	NS
Race (R)	1 and 319	0.52	NS
T by S Interaction	1 and 319	0.07	NS
T by R Interaction	1 and 319	0.48	NS
S by R Interaction	1 and 319	0.35	NS
T by S by R Interaction	1 and 319	1.35	NS

Table 23. Adjusted CDI posttest means of experimental and control students assigned to counselors having different types of training.

Treatment	Type of Counselor Training	Adjusted CDI Posttest Mean			
		Scale A	Scale B	Scale C	Total
E	ECES and HR	108.5	254.5	16.5	378.6
	ECES only	107.9	249.6	17.6	378.6
	Other	107.2	248.5	17.4	378.4
	Covariance F-value	0.21	0.51	1.76	0.00
	Level of Significance	NS	NS	NS	NS
C	HR	104.3	237.1	18.1	365.6
	No HR	105.8	237.3	17.5	366.7
	Other	106.4	237.0	17.5	365.1
	Covariance F-value	0.97	0.00	1.42	0.09
	Level of Significance	NS	NS	NS	NS

Table 24. Number of counselors who agree with Counselor Reaction Questionnaire statements (N=29).

Item No.		Agree	Disagree	?
	CRQ Statements on Effects of ECES on Students			
2.	Students know a lot more about themselves after using ECES.	27	7	0
7.	Students have more occupational and educational information after using ECES.	28	0	1
12.	ECES gives students a frame of reference that helps them think about their futures.	29	0	0
17.	ECES generates interest in thinking about occupations.	27	1	1
22.	The students' anxieties about occupational choice are greatly reduced by ECES.	13	13	3
27.	Boys are more interested in using ECES than are girls.	19	4	6
28.	Some of the individually constructed ECES messages to the student tend to discourage him unduly.	13	15	1
32.	ECES leads students to premature closure on their vocational plans.	2	26	1
37.	The college-bound students are more attracted by ECES than are the non-college-bound.	5	21	3
	CRQ Statements on ECES Hardware, Scripts and Mechanics			
5.	The Career Questionnaire was a good experience for our students.	19	7	3
10.	Working through the Search Strategies has been very helpful to students.	24	4	1
15.	The VPI is just the test we need at this school.	14	12	3
19.	OIVS is a good interest test for my students.	24	3	2
21.	The terminals should be in the schools, rather than in GISD.	27	0	2
23.	Students should be allowed at least three sessions on ECES.	27	2	0
26.	One hour is long enough for a session on ECES.	16	13	0
31.	The computer and the terminals worked well (mechanically) when my students were scheduled to use ECES.	13	15	1
33.	The charts that ECES provides users are very useful.	26	3	0
36.	The activities that ECES recommends to users, e.g., Skill Center courses, seem to be appropriate.	20	8	1
39.	ECES is appropriate for the special needs of the students at our school.	24	3	2
6.	ECES should be available to 9th graders.	17	10	2
1.	ECES should be available to all 10th graders.	29	0	0
11.	ECES should be available to 11th graders.	27	2	0

Table 24. (continued)

Item No.		Agree	Disagree	?
16.	ECES should be available to 12th graders.	26	3	0
	CRQ Statements on Effects of ECES on Counselors (Incidental)			
3.	The follow-up activities that I engage in after a student uses ECES have been rewarding.	15	5	9
8.	ECES creates more work for already busy counselors.	22	6	1
13.	ECES has led me to do some local research on the users.	11	11	7
18.	I work with students at a much higher level of problem-solving after they have used ECES.	13	9	7
24.	Because of ECES, I have had to do some reading that I otherwise would not have done.	20	7	2
29.	The demands of ECES users have caused me to neglect other students whom I used to serve better.	9	16	4
34.	Orienting students to ECES has been a valuable task for me.	14	8	7
38.	ECES has caused me to see types of students that I did not previously see.	13	14	2
	Effects of ECES on Counselors (Intentional)			
4.	I have been well provided with information I needed to have in order to help my students use ECES.	17	8	14
9.	Participating in the Human Relations Training has made my professional life more interesting.	13	6	10
14.	I have been treated as a professional in the evaluation of ECES.	23	5	1
20.	I felt that I was a real part of the ECES trial.	21	8	0
25.	Individual or small group sessions would be best for the ECES counselor training program.	27	2	0
30.	The time demands of ECES and Human Relations training programs were excessive.	19	10	0
35.	The course credit arrangement for the Human Relations training seems to have worked out well.	12	4	13

Appendix A

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Appendix B

CAREER DEVELOPMENT INVENTORY

Form I

Donald E. Super
Martin J. Bohn Jr.
David J. Forrest
Jean Pierre Jordaan
Richard H. Lindeman
Albert S. Thompson

Teachers College, Columbia University
New York, New York

Copyright 1971

* *

Introduction

The questions you are about to read ask you about school, work, your future career, and some of the plans you may have made. The only right answers are the ones which are right for you. Later, some questions ask about career facts; others ask you to judge students' plans. Give the best answers you can.

Answers to questions like these can help teachers and counselors offer the kind of help which high school students want and need in planning and preparing for a job after graduation, for vocational and technical school training, or for going to college.

The First Step

You must use a Number Two pencil for all of the work which follows. Ask if you do not have one. Check your booklet to make sure it has 14 pages all in the right order. ...Now look at the printed answer sheet. At the top, fill in only your name, grade, sex, and school. Do that now.... Below the lines on the answer sheet is an area called "identification number". Your own number is there already. It reads down---for example, 005, 017, 238. This is your own answer number. Write it in the space below, along with your name and today's date.

______________	______________________,	______________	______________
Identification Number	Last	First	Date
	NAME		

PAGE 2 IS ON THE BACK

Appendix B (cont.)

Your Future Occupation

In your present thoughts and plans, what kind of work would you like to do when you finish all of your education and training? What kind of occupation do you plan to enter? For example, bookkeeper, machinist, lawyer, registered nurse, small store owner, waitress, engineer, shop foreman, elementary teacher, truck driver, etc. Write the name(s) of the occupation(s) you have thought about on the lines below:

____

____

____

____

If you have given more than one occupation, put an "X" in front of your first choice, the one you prefer more than the others.

Completing the Identification

Your own student number is marked in the first three boxes of the identification area at the top of the answer sheet....In the next box put a one (1) if you are in the 10th grade, a two (2) if you are in the 11th. Then fill in the correct space to the right of the box, just like above....In the next box, the fifth one, put a one (1) if you are male, two (2) if female; mark the correct space to the right of the box....In the next two spaces put the number of your school, taken from the list below. Remember to count down and include any 0's.

School	Number	School	Number	School	Number
Northern---------	01	Kearsley---------	10	Clio--------------	18
Northwestern-----	02	LakeVille--------	11	Flushing----------	19
Genesee----------	03	Swartz Creek-----	12	Grand Blanc-------	20
Atherton---------	04	Ainsworth--------	13	Lake Fenton-------	21
Beecher----------	05	Central----------	14	Linden------------	22
Bendle-----------	06	Southwestern-----	15	Montrose----------	23
Davison----------	07	Carman-----------	16	Mt. Morris--------	24
Fenton-----------	08	Bentley----------	17	Westwood Hts.-----	25
Goodrich---------	09				

In the next box, the eighth one, put a one (1) if you are taking this in the Fall, a two (2) if it is Spring....If you have used the computer terminals of the Educational and Career Exploration System (ECES) in your school this year, put a one (1) in the next box. If you have not used ECES in your school this year, put a 0 in the box. The last box is blank.

Appendix B (cont.)

Nine of the identification boxes should now be filled with numbers, and the spaces to the right of the boxes should be marked. The boxes should be filled with the following information:

Number of box (counting down)	Code
1,2,3	Your number, already marked
4	Grade: 1 = 10th, 2 = 11th
5	Sex: 1 = Male, 2 = Female
6,7	School: Refer to list
8	Time of Year: 1 = Fall, 2 = Spring
9	ECES: 1 = Used it, 0 = Have not used it
10	Blank

How to Answer

All your answers go on the answer sheet. Do not write any more in the booklet. Use only a number 2 pencil so the scoring machine can read your answers. Ask for a pencil if you do not have one.

Notice that the answers go across the page, not down.

After you choose an answer to a question, find the number of the question on the answer sheet and fill in the space between the dotted lines after the number of your answer. Completely erase mistakes or changed answers so they will not be scored. Do not make any extra marks on the answer sheet.

ANSWER ALL QUESTIONS. If you are not sure about an answer, guess. There is no time limit, but work as rapidly as you can; the first answer that comes to you is often the best one.

The questions begin on the next page.

Appendix B (cont.)

I. How much thinking and planning have you done in the following areas? What kind of plans do you have? For each question below choose one of the following answers to show what you have done.

1) I have not given any thought to this.

2) I have given some thought to this, but haven't made any plans yet.

3) I have some plans, but am still not sure of them.

4) I have made definite plans, but don't know how to carry them out.

5) I have made definite plans, and know what to do to carry them out.

1. Finding out about educational and occupational possiblities by going to the library, sending away for information, or talking to somebody who knows about the possibilities.

2. Talking about career decisions with an adult who knows something about me.

3. Taking high school courses which will help me decide what line of work to go into when I leave school or college.

4. Taking high school courses which will help me in college, in job training, or on the job.

5. Taking part in school or out of school activities which will help me in college, in training, or on the job.

6. Taking part in school or after school activities (for example, science club, school newspaper, Sunday School teaching, volunteer nurse's aide) which will help me decide what kind of work to go into when I leave school.

7. Getting a part-time or summer job which will help me decide what kind of work I might go into.

8. Getting a part-time or summer job which will help me get the kind of job or training I want.

9. Getting money for college or training.

10. Dealing with things which might make it hard for me to get the kind of training or the kind of work I would like.

11. Getting the kind of training, education, or experience which I will need to get into the kind of work I want.

12. Getting a job once I've finished my education and training.

13. Doing the things one needs to do to become a valued employee who doesn't have to be afraid of losing his job or being laid off when times are hard.

14. Getting ahead (more money, promotions, etc.) in the kind or work I choose.

Appendix B (cont.)

II. High School students differ greatly in the amount of time and thought they give to making choices. Use the statements below to compare youself to the typical students of your sex in your grade on each of the following kinds of choices.

Compared to my classmates I am....

1) much below average, not as good as most
2) a little below average
3) average
4) a little above average
5) much above average, better than most

....in the amount of time and thought I give to:

15. Choosing high school courses.
16. Choosing high school activities.
17. Choosing out-of-school activities.
18. Choosing between college, junior college, business school, technical school, work, military service, marriage, homemaking, etc.
19. Choosing a college, branch of military service, wife or husband, etc.
20. Choosing an occupation for after high school, college, or job training.
21. Choosing a career in general.
22. How would you rate your plans for "after high school"?
    1) Not at all clear or sure.
    2) Not very clear.
    3) Some not clear, some clear.
    4) Fairly clear.
    5) Very clear, all decided.

Appendix B (cont.)

III. Below are five possible answers to use in answering questions 23 through 33, questions about how much you know about the occupation you said you like best on page two. Mark the number of your choice on the answer sheet.

I know....

1) hardly anything

2) a little

3) an average amount

4) a good deal

5) a great deal

.... about:

23. What people really do on the job.

24. Specialities in the occupations.

25. Different places where people might work in this occupation.

26. The abilities and traits needed in the occupation.

27. The physical working conditions.

28. The education or training needed to get into the occupation.

29. The courses offered in high school that are the best for the occupation.

30. The need for new people in the occupation.

31. Different ways of entering the occupation.

32. The starting pay in the occupation.

33. The chances for getting ahead in the occupation.

Appendix B (cont.)

IV. Here are five answers which can be used for questions 34 through 47. Use these answers to show whether or not you would go to the sources of information listed below for help in making your job or college plans.

I would....

1) definitely not
2) probably not
3) not be sure whether to
4) probably
5) definitely

....go to:

34. Father or male guardian.
35. Mother or female guardian.
36. Brothers, sisters, or other relatives.
37. Friends.
38. Coaches of teams I have been on.
39. Minister, priest, or rabbi.
40. Teachers.
41. School counselors.
42. Private counselors, outside of school.
43. Books with the information I needed.
44. Audio or visual aids like tape recordings, movies, or computers.
45. College catalogues.
46. Persons in the occupation or at the college I am considering.
47. TV shows, movies, or magazines.

Appendix B (cont.)

V. Here again are five answers which are to be used with the following items. This time use the statements to show which of the sources of information below have already given you information which has been helpful to you in making your job or college plans.

I have gotten....

1) no useful information

2) very little useful information

3) some useful information

4) a good deal of useful information

5) a great deal of useful information

....from:

48. Father or male guardian.

49. Mother or female guardian.

50. Brothers, sisters, or other relatives.

51. Friends.

52. Coaches of teams I have been on.

53. Minister, priest, or rabbi.

54. Teachers.

55. School counselors.

56. Private counselors, outside of school.

57. Books with the information I needed.

58. Audio or visual aids like tape recordings, movies, or computers.

59. College catalogues.

60. Persons in the occupation or at the college I am considering.

61. TV shows, movies, or magazines.

Appendix B (cont.)

VI. Here, each question has its own set of possible answers.

62. Which one of the following is the best source of information about job duties and opportunities?

    1) The Encyclopedia Britannica

    2) World Almanac

    3) Scholastic Magazine

    4) The Occupational Index

    5) The Occupational Outlook Handbook

63. Which one of the following would be most useful for detailed information about getting into college?

    1) The World Book Encyclopedia

    2) Webster's Collegiate Dictionary

    3) Lovejoy's College Guide

    4) Reader's Digest

    5) The Education Index

64. Which one of the following pairs of occupations involves the same level of training and responsibility?

    1) Tailor, Sales Clerk

    2) Engineer, Banker

    3) Tailor, Engineer

    4) Banker, Sales Clerk

65. The occupational fields expected to grow most rapidly during the next ten years are:

    1) Professional and service.

    2) Sales and crafts.

    3) Crafts and clerical.

    4) Labor and sales.

Appendix B (cont.)

66. Between 1910 and 1970, the industry employing the greatest number of workers changed from:

    1) Agriculture to wholesale and retail trade.

    2) Manufacturing to agriculture.

    3) Wholesale and retail trade to manufacturing.

    4) Agriculture to manufacturing.

VII. Occupations are different in the amount of education required for employment. Match the occupation in Column A with the amount of education usually required (Column B) by marking the number of the correct answer on the answer sheet:

COLUMN A

Occupation

67. Stenographer
68. Dental Technician
69. Family Doctor (Physician)
70. Mail Carrier
71. Plumber
72. Computer Operator
73. Bank Clerk
74. Social Worker

COLUMN B

Education

1) High School Graduation
2) Apprenticeship Training
3) Technical School or Community College (2 year)
4) College Degree (4 year)
5) Professional Degree Beyond College

VIII. Many occupations use special tools. Below is a list of special tools or equipment and a list of occupations. Match the occupation in Column A with its equipment (Column B).

COLUMN A

Occupation

75. Electrician
76. Bookkeeper
77. Bricklayer
78. Dressmaker
79. Medical Technician

COLUMN B

Equipment

1) Manikin
2) Ammeter
3) Centrifuge
4) Trowel
5) Ledger

IX. Here again, each question has its own set of answers.

80. In the 9th and 10th grades, plans about jobs and occupations should:

    1) be clear.

    2) not rule out any possibilities.

    3) keep open the best possibilities.

    4) not be something to think about.

Appendix B (cont.)

81. Decisions about high school courses can have an effect on:

    1) the kind of diploma one gets.
    2) the kind of training or education one can get after high school.
    3) later occupational choices.
    4) how much one likes school.
    5) all of these.

82. Decisions about jobs should take into account:

    1) strengths, or what one is good at learning and doing.
    2) what one likes to do.
    3) the kind of person one is.
    4) the chances for getting ahead in that kind of job.
    5) all of these.

83. One of the things that great artists, musicians, and professional athletes have in common is the desire to:

    1) make money.
    2) have large audiences.
    3) be the best there is at what they do.
    4) teach others to do what they do.

84. Mary thinks she might like to become a computer programmer, but she knows little about computer programming. She is going to the library to find out more about it. The most important thing for Mary to know now is:

    1) what the work is, what she would do in it.
    2) what the pay is.
    3) what the hours of work are.
    4) where she can get the right training.

Appendix B (cont.)

85. Jane likes her high school biology and general science courses best. She likes to do her schoolwork alone so she can concentrate. When she begins to think about her future occupation, she should consider:

    1) Nurse.

    2) Accountant.

    3) Medical Laboratory Technician.

    4) Elementary School Teacher.

86. Peter is the best speaker on the school debating team. The school yearbook describes him as "our golden-tongued orator--a real nice guy who can listen as well as talk--he could sell refrigerators to the Eskimos." Peter will probably graduate in the bottom half of his class, although his test scores show that he is very bright. His only good grades (mostly B's) are in business subjects. His poorest grades are in English and social studies (mostly C's).

    Peter's desire to become a trial lawyer is not very realistic because:

    1) with his grades he will have difficulty getting into a four year liberal arts college.

    2) he has poor grades in the subjects that are most important for law.

    3) there is much more to being a lawyer than being good at public speaking.

    4) all of the above are good reasons for thinking that Peter will have a hard time becoming a trial lawyer.

87. The facts about Peter suggest that he should think about becoming:

    1) an accountant.

    2) a salesman.

    3) an actor.

    4) a school counselor.

    5) a lawyer.

Appendix B (cont.)

88. Ernie took some tests which show that he might be good at clerical work. Ernie says, "I just can't see myself sitting behind a desk for the rest of my life. I'm the kind of guy who likes variety. I think being a traveling salesman would suit me fine." He should:

    1) disregard the tests and do what he wants to do.

    2) do what the tests say since they know better than he does what he would be good at.

    3) look for a job which will let him use his clerical abilities but not keep him pinned to a desk.

    4) ask to be tested with another test since the results of the first one are probably wrong.

89. Joe is very good with his hands and there isn't anybody in his class who has more mechanical aptitude. He is also good at art. His best subject at school is math. Joe likes all of these things.

    What should Joe do? Should he:

    1) look for an occupation in which he can use as many of his interests and abilities as possible?

    2) pick an occupation which uses math since there is a better future in that than in art or in working with his hands?

    3) decide which of these activities he is best at, or likes the most, and then pick an occupation which uses that kind of activity?

    4) put off deciding about his future and wait until he loses interest in some of these activites?

90. Betty gets very good science grades but this isn't her favorite subject. The subject she likes best is art even though her grades in it are only average. Betty is most likely to do well in her future occupation if she:

    1) forgets about her interest in art since she is so much better in science.

    2) doesn't worry about the fact that she isn't very good at art, because if you like something you can become good at it.

    3) looks for an occupation which uses both art and science, but more science than art.

    4) looks for an occupation which involves both science and art, but more art than science.

Appendix B (cont.)

91. Bob says he really doesn't care what kind of work he gets into once he leaves school as long as it is working with people. If this is all Bob cares about he is likely to make a bad choice because:

1) this kind of work usually requires a college degree.
2) employers usually hire girls for such work.
3) people look down on men who work with people because such work is usually done by girls.
4) occupations in which one works with people can be very different from each other in the abilities and interests which are needed.

dp 9/14/71
Genesee Intermediate S/D

Appendix C

Name______________________________ Date____________________

School______________________________

ECES - TC

STUDENT REACTION FORM - FORM ONE

Directions: Please answer each of the following questions by checking ( ) one of the responses which follow each question. There are no right or wrong answers. We just want to know what your reaction has been to the ECES system today.

1. How easy was it for you to learn to use each of the following features of the ECES system?

	Very Easy	Fairly Easy	Fairly Hard	Very Hard	I did not use it today
a. The POINTER	( )	( )	( )	( )	( )
b. The NEXT PICTURE box	( )	( )	( )	( )	( )
c. The LOAD-UNLOAD boxes	( )	( )	( )	( )	( )
d. The HELP, GO BACK and ERASE boxes	( )	( )	( )	( )	( )
e. The ten NUMBER BOXES	( )	( )	( )	( )	( )
f. The OCCUPATIONS, MAJORS, and CHARTS boxes	( )	( )	( )	( )	( )
g. The keys on the typewriter	( )	( )	( )	( )	( )

2. How good a job did the system do of explaining to you each of the following ideas?

	Very good job	Fairly good job	Fairly poor job	Very poor job
a. Fields of interest	( )	( )	( )	( )
b. Job features such as working conditions, salary, etc.	( )	( )	( )	( )
c. Amount of education required	( )	( )	( )	( )
d. Relationship between occupations and majors in high school and college	( )	( )	( )	( )

Appendix C (cont.)

STUDENT REACTION FORM I

3. Did you explore any occupations today? Yes______ No______
If No, skip to No. 5; if Yes:
How good a job did the system do of explaining each of the following?

	Very good job	Fairly good job	Fairly poor job	Very poor job	Does not apply or did not see
a. The activities performed by people in the occupation.	( )	( )	( )	( )	( )
b. The tools, equipment or resources used by people in the occupation.	( )	( )	( )	( )	( )
c. The qualifications needed by people in the occupation.	( )	( )	( )	( )	( )
d. The working conditions in the occupation.	( )	( )	( )	( )	( )
e. The education and training needed in the occupation.	( )	( )	( )	( )	( )
f. The chances of employment in the occupation.	( )	( )	( )	( )	( )
g. The salary you could expect in the occupation.	( )	( )	( )	( )	( )
h. The chances of advancement in the occupation.	( )	( )	( )	( )	( )

4. Did you explore any majors today? Yes______ No______
If No, skip to No. 6; If Yes:
How good a job did the system do of explaining:

	Very good job	Fairly good job	Fairly poor job	Very poor job	Does not apply or did not see
a. What courses are reauired in the major?	( )	( )	( )	( )	( )
b. The subject matter covered by each course in the major?	( )	( )	( )	( )	( )
c. The electives suggested for a particular major?	( )	( )	( )	( )	( )

Appendix C (cont.)

STUDENT REACTION FORM I

	Very easy	Fairly easy	Fairly hard	Very hard	Did not see any charts
5. Were the charts easy to understand?	( )	( )	( )	( )	( )

6. How good a job did the charts do in helping you to:

	Very good	Fairly good	Fairly poor	Very poor	Did not see any charts
a. see connections between your interests and possible occupations?	( )	( )	( )	( )	( )
b. see connections between your abilities and possible occupations?	( )	( )	( )	( )	( )
c. discover new occupational possibilities you might look into?	( )	( )	( )	( )	( )
d. see connections between majors and occupations?	( )	( )	( )	( )	( )

7. How good a job did the ECES system do in helping you in the area of:

	Very good job	Fairly good job	Fairly poor job	Very poor job
a. educational planning?	( )	( )	( )	( )
b. occupational planning?	( )	( )	( )	( )

8. Each time you use the ECES system you spend about an hour at the terminal. Is that about the right amount of time?

( ) No, an hour is too long.

( ) Yes, an hour is about right.

( ) No, an hour is too short.

Appendix C (cont.)

STUDENT REACTION FORM I

9. If you use the ECES system for about an hour each time, how many times do you think you should use it while in the 10th grade?

( ) 1 or 2 times.

( ) 3 or 4 times.

( ) 5 or 6 times.

( ) 7 or more times.

10. How good a job did each of the following features do in helping you to learn about occupations?

	Very good	Fairly good	Fairly poor	Very poor
a. Cartoons.	( )	( )	( )	( )
b. Photographs.	( )	( )	( )	( )

11. What is your overall reaction to the ECES system?

( ) I like it very much.

( ) I like it somewhat.

( ) I dislike it somewhat.

( ) I dislike it very much.

Appendix D

Name______________________________ Date____________________

School______________________________

ECES-TC

STUDENT REACTION FORM - FORM TWO

Directions: Please answer each of the following questions by checking ( ) one of the responses which follow each question. There are no right or wrong answers. We just want to know what your reaction has been to the ECES system today.

1. Counting today, the number of times you have been on the ECES system is:

( ) One
( ) Two
( ) Three
( ) Four
( ) Five or more. How many times? ______

2. Did you explore any occupations today? Yes______ No______

How good a job did the system do of explaining each of the following?

	Very good job	Fairly good job	Fairly poor job	Very poor job	Does not apply or did not see
a. The activities performed by people in the occupation.	( )	( )	( )	( )	( )
b. The tools, equipment or resources used by people in the occupation.	( )	( )	( )	( )	( )
c. The qualifications needed by people in the occupation.	( )	( )	( )	( )	( )
d. The working conditions in the occupation.	( )	( )	( )	( )	( )
e. The education and training needed in the occupation.	( )	( )	( )	( )	( )
f. The chances of employment in the occupation.	( )	( )	( )	( )	( )
g. The salary you could expect in the occupation.	( )	( )	( )	( )	( )
h. The chances of advancement in the occupation.	( )	( )	( )	( )	( )

Appendix D (cont.)

STUDENT REACTION FORM II

3. Did you explore any majors today? Yes______ No______

How good a job did the system do of explaining:

	Very good job	Fairly good job	Fairly poor job	Very poor job	Does not apply or did not see
a. what courses are required in the major?	( )	( )	( )	( )	( )
b. the subject matter covered by each course in the major?	( )	( )	( )	( )	( )
c. the electives suggested for a particular major?	( )	( )	( )	( )	( )

4. Did you look at any charts on the system today? Yes______ No______

	Very easy	Fairly easy	Fairly hard	Very hard	Did not see any charts
5. Were the charts easy to understand?	( )	( )	( )	( )	( )

6. How much did the charts help you to:

	Very much	Fairly much	A little	Very little	Did not see any charts
a. see connections between your interests and possible occupations?	( )	( )	( )	( )	( )
b. see connections between your abilities and possible occupations?	( )	( )	( )	( )	( )
c. discover new occupational possibilities you might look into?	( )	( )	( )	( )	( )
d. see connections between majors and occupations?	( )	( )	( )	( )	( )

7. How good a job did the ECES system do in helping you in the area of:

	Very good job	Fairly good job	Fairly poor job	Very poor job
a. educational planning?	( )	( )	( )	( )
b. occupational planning?	( )	( )	( )	( )

Appendix D (cont.)

STUDENT REACTION FORM II

8. Each time you use the ECES system you spend about an hour at the terminal. Is that about the right amount of time?

   ( ) No, an hour is too long.

   ( ) Yes, an hour is about right.

   ( ) No, an hour is too short.

9. If you use the ECES system for about an hour each time, how many times do you think you should use it while in the 10th grade?

   ( ) 1 or 2 times.

   ( ) 3 or 4 times.

   ( ) 5 or 6 times.

   ( ) 7 or more times.

10. What is your overall reaction to the ECES system?

   ( ) I like it very much.

   ( ) I like it somewhat.

   ( ) I dislike it somewhat.

   ( ) I dislike it very much.

Appendix E

STUDENT WEEKLY ACTIVITIES REPORT

Genesee Intermediate School District and
Teachers College, Columbia University

ME________________________________ Date______________________
Last First M.I.

HOOL________________________________

rections:

are collecting these reports each week from a selected sample of students in order to know re about the things students do that have direct bearing on planning post-high school edation, training and employment. Please read each activity and put a check after each one at you did last week, using Column A to show what you did at school or with school help, lumn B-- out of school, through some other organization or on your own, or Column C if you d not do that at all last week.

at Have You Done During The Past Week In:	During The Past Week I Did This: Column A At School	 Column B Out Of School	 Column C Not At All
Reading About Education?			
a. Glanced at a book or article about school or college.			
b. Read a book or article about school or college.			
c. Made notes about things I read on school or college.			
Reading About Jobs or Occupations?			
a. Glanced at a book or article about jobs.			
b. Read a book or article about jobs.			
c. Made notes about things I read on occupations.			
Discussions About Education?			
a. Attended a lecture or discussion on school or college.			
b. Talked with my family about school or college.			
c. Talked with students about school or college.			
Discussions About Jobs or Occupations?			
a. Attended a lecture or discussion about jobs and occupations.			
b. Talked with my family about jobs and occupations.			
c. Talked with students about jobs and occupations.			
Looking Into School or College?			
a. Visited a school or college to learn more about it.			
b. Talked with an admissions officer or student about school or college.			
c. Talked with my school counselor or teacher about school or college.			
Looking Into Jobs or Occupations?			
a. Visited place of work to learn more about jobs.			
b. Talked with an employer about jobs.			
c. Talked with my school counselor or teacher about jobs.			
Finding Out About Military Service?			
a. Read about the draft, enlistment, or officer training.			
b. Talked with draft board or military recruiter.			
c. Talked with a counselor about alternatives.			

:dp
-16-70

Appendix F

Educational and Career Exploration System

Questionnaire for Students

Please fill out this questionnaire as soon as you can and mail it to us.

I am: male ______ female ______.

My school is ____.

My name is ____.

I used ECES _____ times.

ECES Evaluation Study
Teachers College
Columbia University
New York, New York

Appendix F (cont.)

1. What is your overall reaction to the Educational and Career Exploration System (ECES)?

   1. I like it very much.
   2. I like it somewhat.
   3. I dislike it somewhat.
   4. I dislike it very much.

1. _____

2. Do you think most students could benefit from ECES?

   1. Definitely not.
   2. Probably not.
   3. Probably could.
   4. Definitely could.

2. _____

3. In what grade do you feel that it would be best for a student to begin sessions with ECES?

   5 6 7 8 9 10 11 12

3. _____

4. ECES is most suitable for:

   1. Those who are going directly to work.
   2. Those who will take some "after high school training."
   3. Those who are going to 2 or 4 year colleges.
   4. All of the above.
   5. None of the above.

4. _____

5. -----

6. How would you describe yourself, in relation to your career plans for the future, before you started using ECES?

   1. I hadn't thought much about my future plans.
   2. I was really uncertain about my future plans.
   3. I was somewhat uncertain about my future plans.
   4. I was rather definite about my future plans.
   5. I was very definite about my future plans.

6. _____

7. Do you feel that you have changed any of your career plans for the future as a result of using ECES?

   1. Definitely not.
   2. Probably not.
   3. Not sure at this time.
   4. Probably have.
   5. Definitely have.

7. _____

Appendix F (cont.)

8. How would you describe yourself, in relation to your career plans for the future, now that you've used ECES?

1. I haven't thought much about my future plans.
2. I am really uncertain about my future plans.
3. I am somewhat uncertain about my future plans.
4. I am rather definite about my future plans.
5. I am very definite about my future plans.

8. _____

9. How has ECES affected your plans for the future?

1. I am much more confused than when I started.
2. I am somewhat more confused than when I started.
3. I am about the same as when I started.
4. I am somewhat more definite than when I started.
5. I am much more definite than when I started.

9. _____

10. About how many new occupations did you explore on ECES that you previously knew little or nothing about?

1. None.
2. 1 - 3.
3. 4 - 6.
4. 7 - 9.
5. 10 or more.

10. _____

11. About how many new majors did you explore on ECES that you previously knew little or nothing about?

1. None.
2. 1 - 3.
3. 4 - 6.
4. 7 - 9.
5. 10 or more.

11. _____

Appendix F (cont.)

Below are five possible statements to be used with the items below.

1. Hardly at all.
2. To only some extent.
3. To an average extent.
4. To a pretty good extent.
5. To a great extent.

Choose the statement above that describes your situation.

To what extent has ECES:

12. been helpful to you in the area of educational planning? 12. ____

13. been helpful to you in the area of occupational planning? 13. ____

14. helped you find definite paths of action in reaching your goals? 14. ____

15. helped you understand how your strengths and weaknesses fit in with your educational goals? 15. ____

16. helped you understand how your strengths and weaknesses fit in with your occupational goals? 16. ____

17. helped you find new information about your situation that helped you make decisions? 17. ____

18. made you feel more aware of the possible educational alternatives you have? 18. ____

19. made you feel more aware of the possible occupational alternatives you have? 19. ____

20. helped you become aware of the important factors on which to base your educational decisions? 20. ____

21. helped you become aware of the important factors on which to base your occupational decisions? 21. ____

22. helped you make better educational decisions? 22. ____

23. helped you make better occupational decisions? 23. ____

Appendix F (cont.)

Below are some things that are generally thought to be necessary in a guidance program.

Please consider each one and decide whether it could be best handled by a counselor, ECES, or a combination of the two.

1. The counselor.
2. ECES.
3. The counselor and ECES.
4. Either the counselor or ECES could do it.
5. Some other source.

Helping you:

24. obtain information about high school courses. 24. ____

25. understand your interests and abilities better. 25. ____

26. consider summer experience in occupations you are thinking about. 26. ____

27. see connections between your high school experience and future plans. 27. ____

28. get useful facts about occupations. 28. ____

29. discover new educational possibilities you might look into. 29. ____

30. discover new occupational possibilities you might look into. 30. ____

31. get information on colleges or training schools. 31. ____

32. make decisions about what to do after high school. 32. ____

33. Do you feel that because of using ECES you would profit more from talks with your counselor?

    1. Definitely not.
    2. Probably not.
    3. Probably would.
    4. Definitely would.

33. ____

34. About how many times did you talk with your counselor about your ECES printouts?

    1. Not at all.
    2. Once.
    3. Twice.
    4. 3 times.
    5. 4 or more times.

34. ____

Appendix F (cont.)

Please consider the following statements.
Then, indicate the extent to which you agree or disagree with each one.

1. Strongly disagree.
2. Mildly disagree.
3. Mildly agree.
4. Strongly agree.

35. I felt that my future was being decided for me. 35. _____

36. I felt that ECES tried to choose an occupation for me. 36. _____

37. I feel that ECES tried to choose a major for me. 37. _____

38. The pictures helped me understand occupations better. 38. _____

39. I would have liked more pictures showing occupations. 39. _____

40. The work samples were useful and informative. 40. _____

41. There should have been more difficult and longer work samples. 41. _____

42. The ECES system was personal enough. 42. _____

43. How often did you discuss the ECES system with your parents?

1. Never.
2. Once.
3. Twice.
4. 3 times.
5. 4 or more times.

43. _____

44. What was your parents' reaction to the ECES printouts?

1. They didn't see any printouts.
2. Definitely unfavorable.
3. Generally unfavorable.
4. Generally favorable.
5. Definitely favorable.

44. _____

45. How easy was it for you to read the printouts?

1. Very easy.
2. Rather easy.
3. So-so.
4. Rather difficult.
5. Very difficult.

45. _____

Appendix F (cont.)

Answer the following two questions only if you used COLLEGE FINDER.

46. You selected colleges or schools based on one or more of the following (check the ones you need):

_____ size of student body.
_____ location in country.
_____ type of student enrollment.
_____ major.

47. Are there any other factors that you would like to have been able to select on?

____

____

____

____

____

48. Did you see Chart 80--the one that summed up all your exploration?

Yes. _____
Not sure. _____
No. _____

49. Do you feel that you have learned how to make better Career Decisions as a result of using ECES?

1. Definitely have. _____
2. Probably have. _____
3. Probably have not. _____
4. Definitely have not. _____

50. Did you change any of your plans because of using ECES?

Yes. _____
No. _____

What plans, and why?

____

____

____

Appendix F (cont.)

51. What schedule would be best for you in using ECES?

1. Once a week for several weeks, on a scheduled basis.
2. Once a month throughout the year, on a scheduled basis.
3. Whenever I feel it can help me, on a sign-up basis.

51. _____

52. Should your school conduct a "Career Planning" course that includes use of ECES along with regular discussions about choosing careers and how to plan for them?

1. Yes.
2. Not sure.
3. No.

52. _____

53. How well do you think you have put together your thinking and planning for your career after high school?

Put a "B" on the scale below to indicate where you were BEFORE you used ECES.

Put a "N" on the scale below to indicate where you are NOW.

Really haven't put anything together--I'm not sure of anything at this point.	I have some sort of idea, but I'm not really sure.	Really put everything together--I know where I'm going and how to get there.

1 2 3 4 5 6 7 8 9 10

54. What would you do to make ECES better?

____

____

____

____

____

Appendix F (cont.)

55. What didn't you like about ECES?

Appendix G

School______________________________

COUNSELOR REACTION FORM

Please respond to the following statements by circling the letters that best describe your reaction.

SA = Strongly agree.
A = Agree.
D = Disagree.
SD = Strongly disagree.
X = Does not apply.

1. ECES should be available to all 10th graders. SA A D SD X
2. Students know a lot more about themselves after using ECES. SA A D SD X
3. The follow-up activities that I engage in after a student uses ECES have been rewarding. SA A D SD X
4. I have been well provided with information I needed to have in order to help my students use ECES. SA A D SD X
5. The Career Questionnaire was a good experience for our students. SA A D SD X
6. ECES should be available to 9th graders. SA A D SD X
7. Students have more occupational and educational information after using ECES. SA A D SD X
8. ECES creates more work for already busy counselors. SA A D SD X
9. Participating in the Hum. Rel. Trng. has made my professional life more interesting. SA A D SD X
10. Working through the Search Strategies has been very helpful to students. SA A D SD X
11. ECES should be available to 11th graders. SA A D SD X
12. ECES gives students a frame of reference that helps them think about their futures. SA A D SD X
13. ECES has led me to do some local research on the users. SA A D SD X
14. I have been treated as a professional in the evaluation of ECES. SA A D SD X
15. The VPI is just the test we need at this school. SA A D SD X
16. ECES should be available to 12th graders. SA A D SD X
17. ECES generates interest in thinking about occupations. SA A D SD X

Appendix G (cont.)

18. I work with students at a much higher level of problem-solving after they have used ECES. SA A D SD X

19. OIVS is a good interest test for my students. SA A D SD X

20. I felt that I was a real part of the ECES trial. SA A D SD X

21. The terminals should be in the schools, rather than in GISD. SA A D SD X

22. The students' anxieties about occupational choice are greatly reduced by ECES. SA A D SD X

23. Students should be allowed at least three sessions on ECES. SA A D SD X

24. Because of ECES, I have had to do some reading that I otherwise would not have done. SA A D SD X

25. Individual or small group sessions would be best for the ECES counselor training program. SA A D SD X

26. One hour is long enough for a session on ECES. SA A D SD X

27. Boys are more interested in using ECES than are girls. SA A D SD X

28. Some of the individually constructed ECES messages to the student tend to discourage him unduly. SA A D SD X

29. The demands of ECES users have caused me to neglect other students whom I used to serve better. SA A D SD X

30. The time demands of ECES and Human Relations training programs were excessive. SA A D SD X

31. The computer and the terminals worked well (mechanically) when my students were scheduled to use ECES. SA A D SD X

32. ECES leads students to premature closure on their vocational plans. SA A D SD X

33. The charts that ECES provides users are very useful. SA A D SD X

34. Orienting students to ECES has been a valuable task for me. SA A D SD X

35. The course credit arrangement for the Human Relations training seems to have worked out well. SA A D SD X

36. The activities that ECES recommends to users, e.g., Skill Center courses, seem to be appropriate. SA A D SD X

37. The college-bound students are more attracted by ECES than are the noncollege bound. SA A D SD X

38. ECES has caused me to see types of students that I did not previously see. SA A D SD X

Appendix G (cont.)

39. ECES is appropriate for the special needs of the students at our school. SA A D SD X

40. I have frequently consulted on matters pertaining to the execution of the ECES field test. SA A D SD X

Appendix II

SURVEY OF GUIDANCE ATTITUDES

Below are 27 commonly made statements about school guidance activities. Would you please indicate the extent to which you agree or disagree with each of these statements. Do so by writing 4, 3, 2, or 1 in the spaces provided.

1 = Strongly agree.
2 = Agree.
3 = Disagree.
4 = Strongly disagree.

_____ 1. At the high school level course choices and curriculum choices have important vocational implications.

_____ 2. Even if a high school student's vocational choice is tentative or unrealistic, it can serve as a basis for exploring his interests, abilities, and values.

_____ 3. There isn't much point in devoting a lot of time to helping students with occupational choices while they are still in high school.

_____ 4. The factors which make for occupational success and satisfaction are so complex that a school counselor might as well go along with what a student wants to do even if it seems somewhat unrealistic.

_____ 5. If teachers and counselors can get pupils to develop good work habits and to perform up to capacity, they have done just about all they can realistically do to facilitate vocational development.

_____ 6. Most students continuing their education beyond high school should wait until after high school graduation to decide on a career.

_____ 7. Time devoted by high school counselors to career guidance can be better spent in other guidance activities.

_____ 8. Students should begin to think about career possibilities as early as the 9th grade.

_____ 9. Acquainting students with trade, technical, and business schools is an important part of a counselor's job.

_____10. It is better for a student to have vocational plans which are changed as time goes on than to have no plans at all.

_____11. Vocational guidance is a good way of motivating students to take their school work seriously.

_____12. Bright students who are working up to capacity usually don't need help in making vocational decisions.

_____13. Most 9th and 10th graders are too immature to begin thinking about how they might eventually earn their living.

Appendix H (cont.)

_____14. If students make good educational choices, their vocational choices will take care of themselves.

_____15. Vocational decisions are best left up to the student and his parents, with the counselor becoming involved only if requested to do so.

_____16. Every school should have a well-developed program for providing students with information about a wide variety of occupations.

_____17. By the time they reach the 11th grade most students know about as much as they need to know about occupations.

_____18. Students should be helped early in their high school years to become aware of the vocational implications of educational choices.

_____19. Aptitude tests and interest inventories are much less useful in guidance than intelligence or achievement tests.

_____20. Guides to colleges and technical schools are more useful to counselors than books like the Occupational Outlook Handbook and the Dictionary of Occupational Titles.

_____21. Helping students to plan and get work experience is an important guidance activity.

_____22. Helping students to evaluate their work experience is an important guidance activity.

_____23. Helping students with personal problems is more important than assisting them with vocational problems.

_____24. Acquainting students with colleges is an important part of a counselor's job.

_____25. Meetings between counselors and employers are, more often than not, a waste of the counselor's time.

_____26. Helping school-leavers to find jobs should be an important part of a counselor's job.

_____27. Helping students with educational decisions is more important than helping them with vocational decisions.

Important: Please furnish the following information:

1. Your job title______________________________
2. Major duties_______________________________
3. Approximate number of hours per week devoted to counseling and guidance____________

Appendix H (cont.)

4. Below are two lists of schools. Look to see which column contains the name of your school.

If it is in Column A, check here_____
If it is in Column B, check here_____

Column A

Flint Northwestern
Flint Central
Ainsworth
Grand Blanc
Flushing
Clio
Mt. Morris
Bentley
Westwood Heights
Linden
Montrose
Lake Fenton

Column B

Flint Northern
Flint Southwestern
Carman
Beecher
Kearsley
Davison
Swartz Creek
Fenton
Lakeville
Atherton
Bendle
Goodrich
Genesee

Appendix J

Educational and Career Exploration System

Questionnaire for Parents

of Students Who Have Used ECES

During the past few months at school your 10th grade student has had the chance to use the new Educational and Career Exploration System (ECES). To help us evaluate the worth of ECES we are asking both you and your student to fill out the enclosed questionnaire and mail it back to us. Your answers are confidential and no one at your student's school will see them. Please be as frank as you can; we value your answers since we want to make ECES useful to both students and parents.

We ask you below for the name of your student. However, you do not have to fill it in. Your answers are more important to us than your name.

Our student is: male _____ female _____.

Our student's school is________________________________.

Our student's name is__________________________________.

Please fill this out and mail it as soon as you can. Thank you.

The Staff of the
ECES Evaluation Study
Teachers College
Columbia University
New York, New York

Appendix J (cont.)

Questions about the Educational and Career Exploration System (ECES)

A.

1. To what extent has your son or daughter discussed his use of ECES in exploring educational and career possibilities?

   1. We discuss it regularly.
   2. There has been quite a lot of discussion at different times.
   3. There has been some discussion--but not much.
   4. It was mentioned--but only briefly.
   5. Not at all.

   1. ____

2. What do you feel your child has gotten from the ECES program?

   ____

   ____

   ____

3. Do you feel that the ECES program can provide significant benefits for your child?

   1. Definitely cannot.
   2. Probably cannot.
   3. Probably can.
   4. Definitely can.

   3. ____

4. Do you feel that you have become more involved in your child's educational or vocational planning since his or her participation in the ECES program?

   1. Definitely have not.
   2. Probably have not.
   3. Probably have.
   4. Definitely have.

   4. ____

Appendix J (cont.)

5. How much help do you feel your son or daughter has received from the ECES program in each of the areas below?

1. None at all.
2. Hardly any help.
3. Some--but not much help.
4. A considerable amount of help.
5. A great deal of help.

A. Seeing connections between his or her high school experience and future plans. A. _____
B. Getting useful facts about occupations. B. _____
C. Seeing connections between his or her interests and possible occupations. C. _____
D. Seeing connections between his or her abilities and possible occupations. D. _____
E. Discovering new occupational possibilities he or she might look into. E. _____
F. Discovering new educational possibilities he or she might look into. F. _____
G. Making good decisions about what to do after high school. G. _____

6. Do you feel your son or daughter is better able to make decisions about his or her career as a result of participating in the ECES program?

1. Definitely is not.
2. Probably is not.
3. Probably is.
4. Definitely is.

6. _____

7. How active have you been in each of the areas below?

1. Not active at all.
2. Not very active.
3. Fairly active.
4. Very active.
5. Extremely active.

A. Helping your son or daughter find summer employment that related to career goals. A. _____
B. Meeting with a school guidance counselor to discuss your son's or daughter's situation and plans. B. _____
C. Making sure that your son or daughter was meeting with the counselor. C. _____
D. Encouraging your son or daughter to talk with individuals employed in careers he or she is considering. D. _____
E. Obtaining books, pamphlets, or other educational and occupational information to assist your son or daughter to decide on future plans. E. _____
F. Obtaining private vocational testing and counseling for your son or daughter. F. _____

Appendix J (cont.)

8. If a service similar to ECES were available, in what grade would you want your son or daughter to begin using it?

___5th ___6th ___7th ___8th ___9th ___10th ___11th ___12th

B. Questions about the guidance program in your son's or daughter's high school.

12. Independent of ECES in general, my son's or daughter's high school guidance program has:

    1. been better than my expectations.
    2. lived up to my expectations.
    3. I am unfamiliar with the program.
    4. not lived up to my expectations.
    5. definitely fell short of my expectations.

12. ____

13. In what ways would you like to see the guidance program expanded or improved?

____

____

____

14. Do you feel that there should be more emphasis on educational and vocational guidance in high school than there is now?

    1. Definitely should not.
    2. Probably should not.
    3. Probably should.
    4. Definitely should.

14. ____

15. How far do you plan for your child to go in school?

Less than high school diploma or equivalent. ____
High school diploma or equivalent. ____
Post-high school training other than junior college. ____
Junior college graduate. ____
College graduate. ____
Graduate school. ____

16. How far did you go in school?

	Father	Mother
Less than high school diploma or equivalent.	____	____
High school diploma or equivalent.	____	____
Post-high school training other than junior college.	____	____
Junior college graduate.	____	____
College graduate.	____	____
Graduate school.	____	____

Appendix J (cont.)

17. What are your occupations?

	Current or Usual Job Title (e.g., engineer, carpenter, filling station attendant)	Type of Employer (e.g., factory, bank, garage)	Currently Unemployed
Father (Male Guardian)	____________	____________	________
Mother (Female Guardian)	____________	____________	________

YOU NEED NOT SIGN THIS QUESTIONNAIRE.

Please put it in the enclosed envelope and mail it directly to Teachers College.

Thank you.